

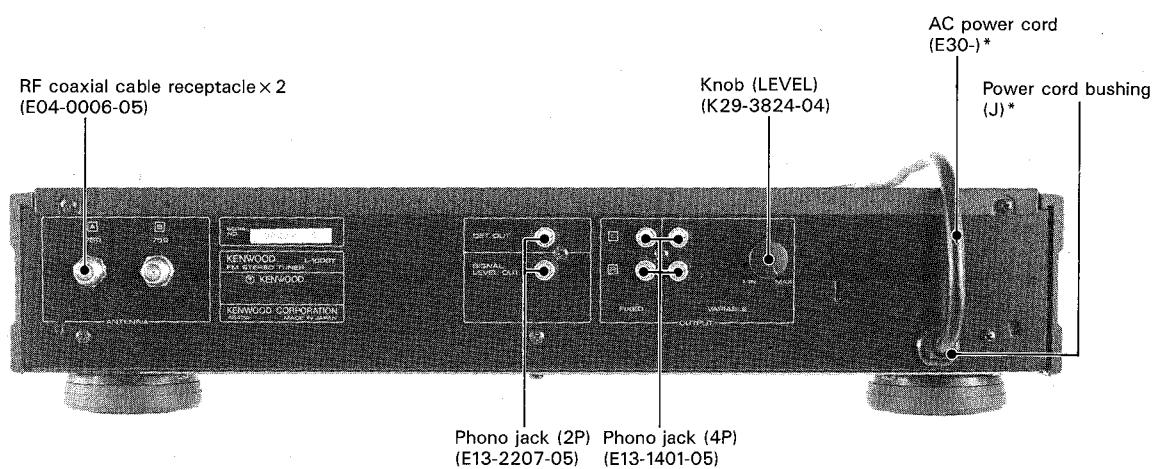
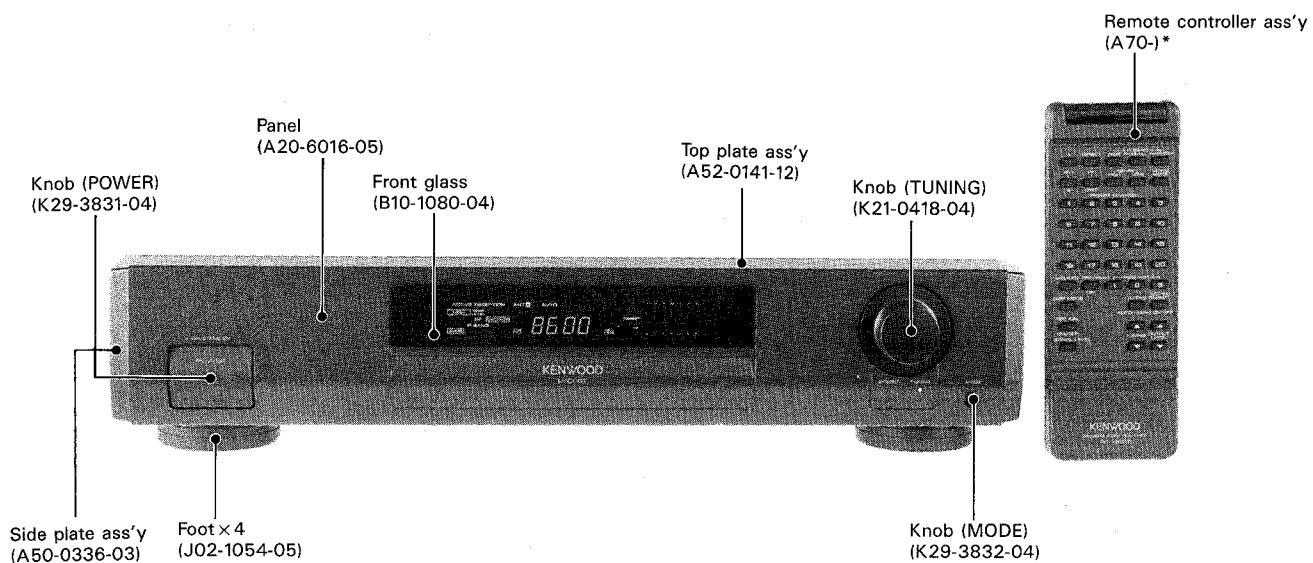
FM STEREO TUNER

# L-1000T

## SERVICE MANUAL

KENWOOD

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B51-4054-00(T)3170



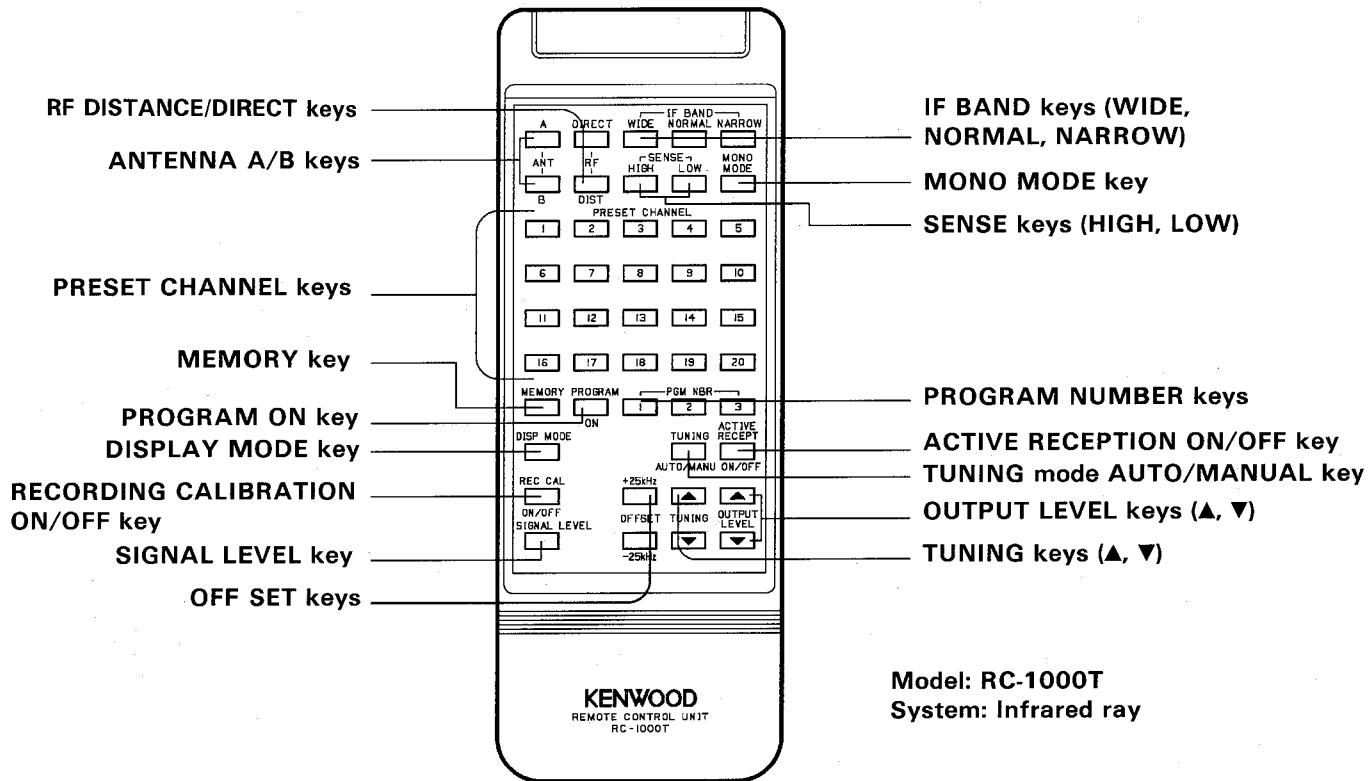
\* Refer to parts list on page 41.

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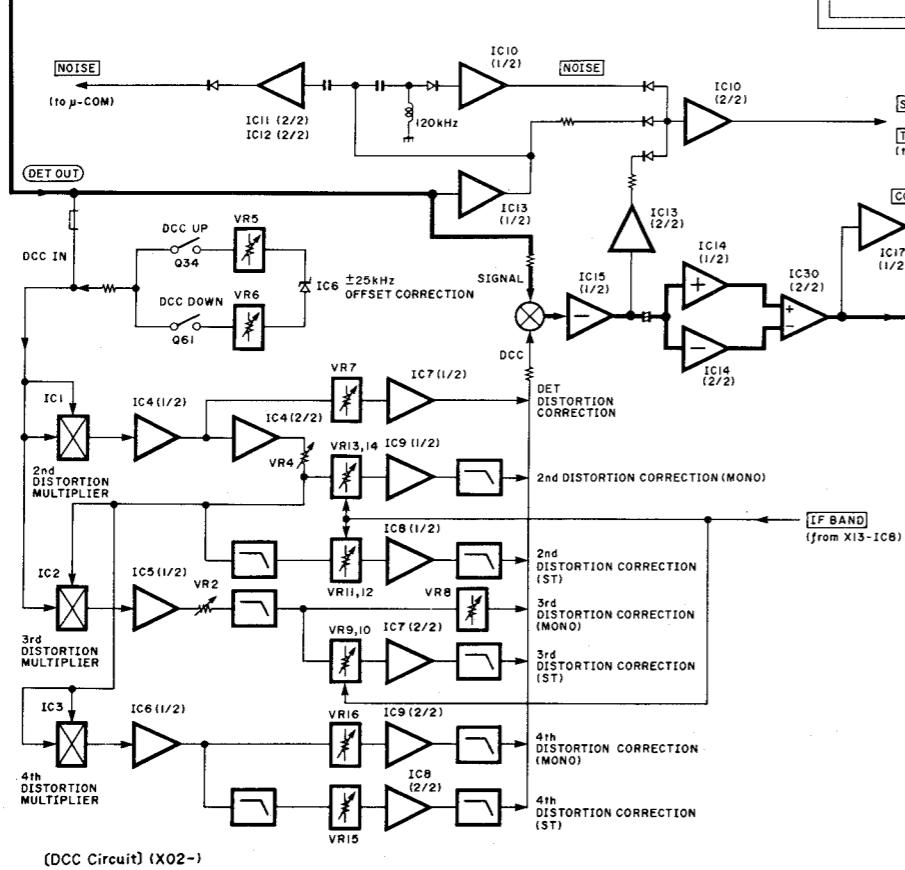
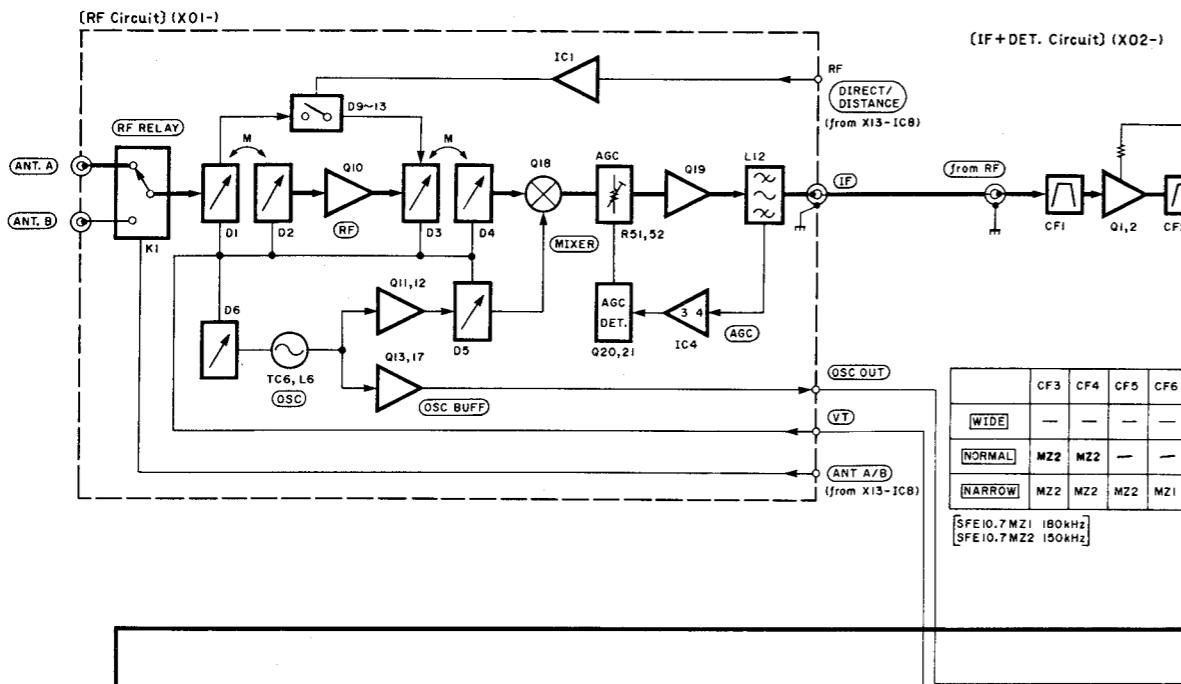
## REMOTE CONTROL UNIT

## ■ Names of controls

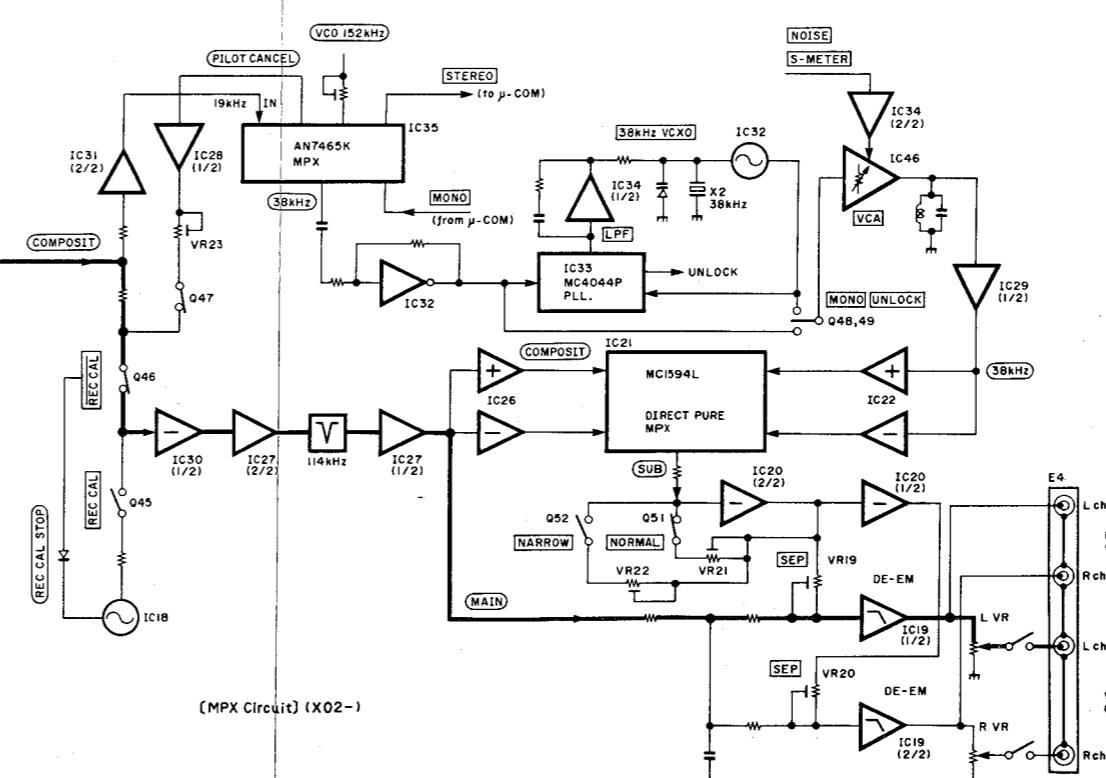
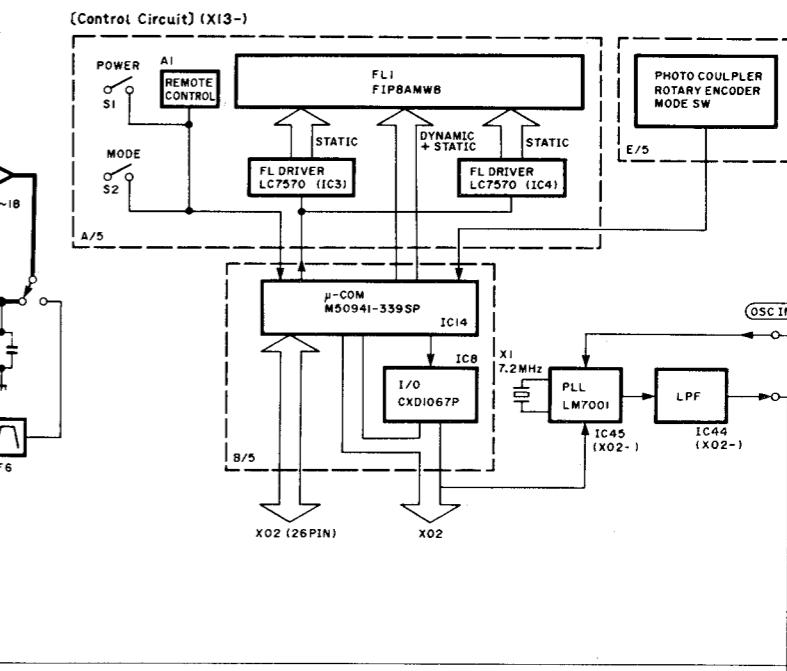


L-1000T | L-1000T

## BLOCK DIAGRAM



## BLOCK DIAGRAM



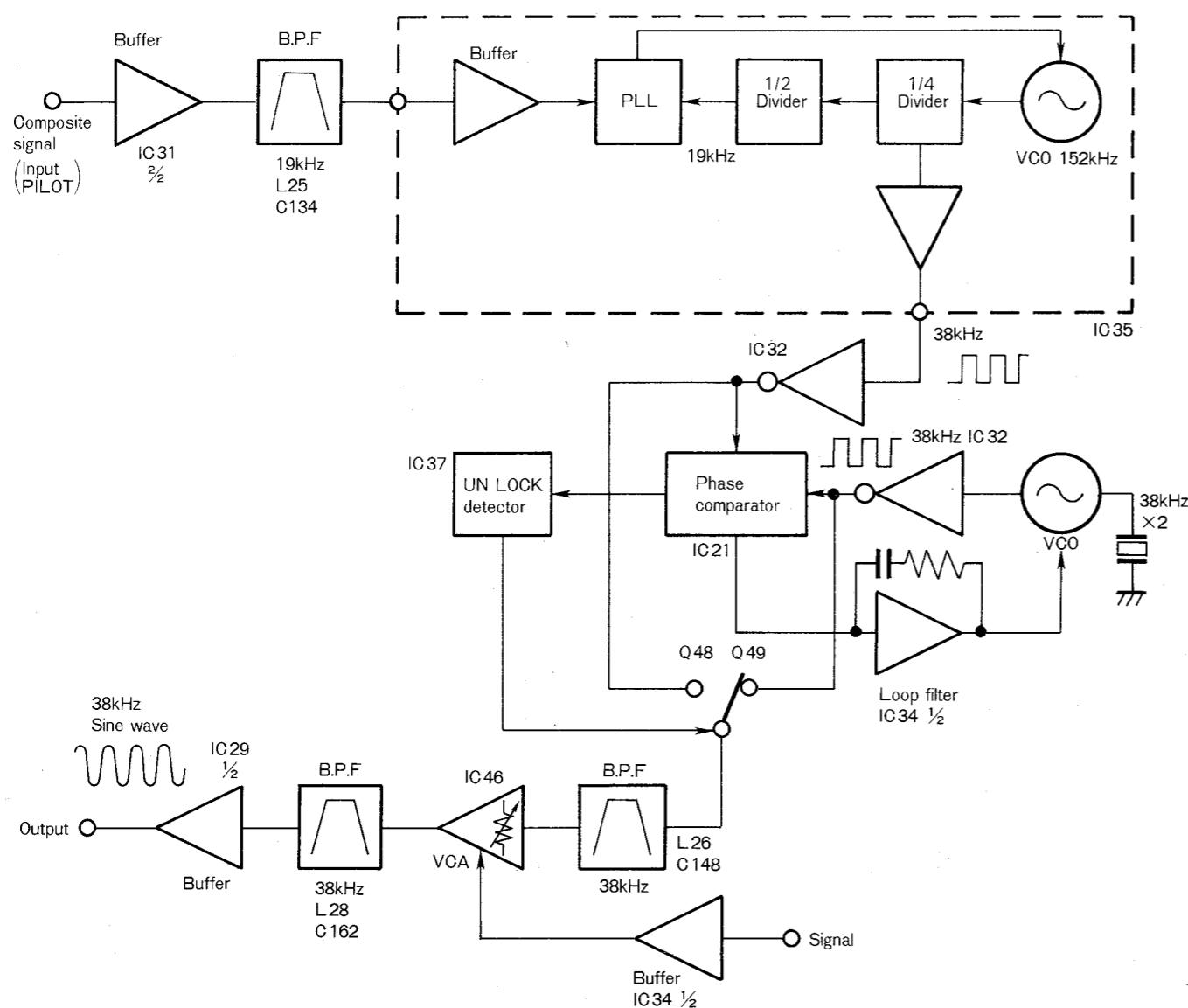
# L-1000T L-1000T

## CIRCUIT DESCRIPTION

### 1. VCXO MPX (X02-1242-70)

The square waves of 38 kHz which is synchronized with input pilot signal (19 kHz) is provided by means of IC35. This signal of 38 kHz is normally input into the demodulation circuit (multiplier) as it is. L-1000T, however, substitutes it for sub-carrier (38 kHz) with less jitter through a crystal oscillation in order to use the circuit which receives more pure demodulation signals of L and R.

The phase comparison of VCXO section is performed by digital (square waves). Because of the range of change in frequency of crystal vibrator (X2) is about from 2 Hz more or less from 38 kHz, PLL is being unlocked if the input pilot signals deviate from the 19 kHz by the range of 1 kHz more or less. Then, the UNLOCK signal is created by IC37 in order to turn ON the gate of Q48 (Q49 is turned OFF) so that subcarrier from the IC35 is used to input this signal into the demodulation circuit.



Depending on signal level, the subcarrier which is converted into sign waves is controlled by VCA reduces the level of SUB signals at the time of ANT input which is less than about 40 dB $\mu$  for the purpose of auto-quieting action.

### 2. Test mode

#### 1. Memory clear (initialization)

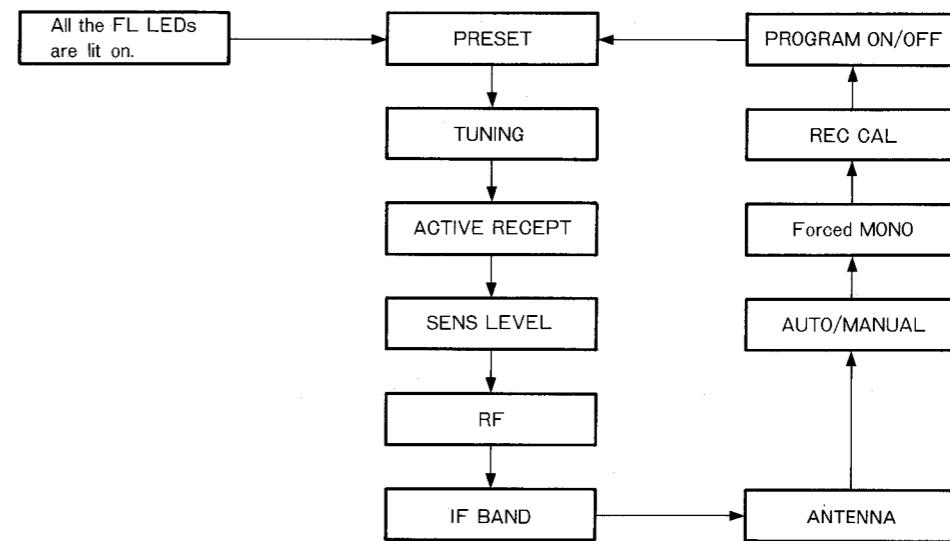
Method: AC plug into an outlet by pressing the POWER key.

Content: First, initialize the preset and program contents, then, enter the normal operation after turning ON the power.

#### 2. Test mode

Method: AC plug into an outlet by pressing the MODE key.

Content: First, initialize the preset and program contents. All the FL LEDs are then lit ON to be waiting for input of the MODE key. Every pressing the MODE key results in the variations shown below. In a condition, variations occur within its condition to meet a pulse of the rotary encoder.



For releasing the test mode, press the POWER key, then, enter the normal operation.

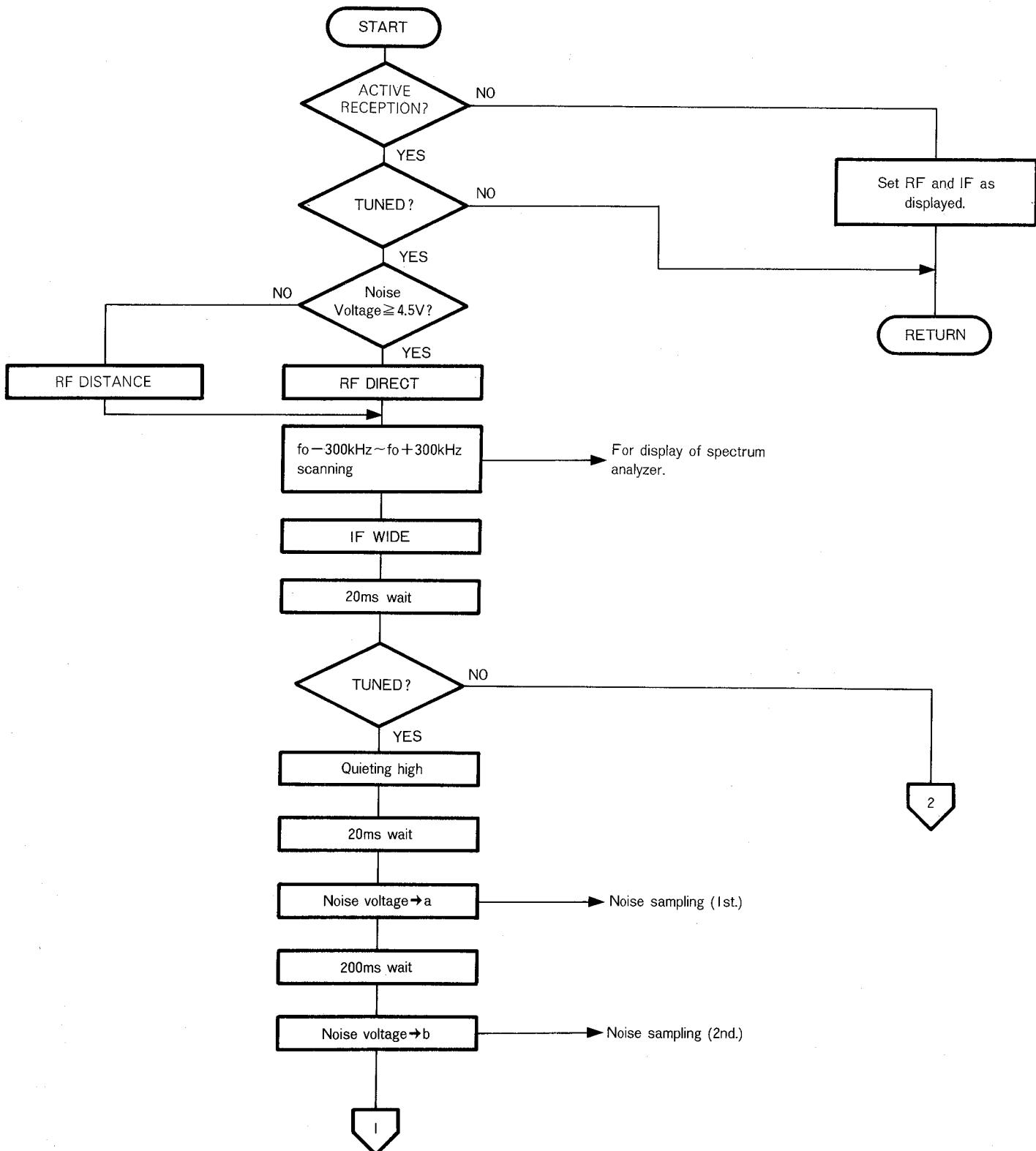
Note: Select an IF band in the order of WIDE, NORMAL and NARROW for clockwise turning, while in the order of WIDE, NARROW and NORMAL for counterclockwise turning.

### Conditions by model for destination

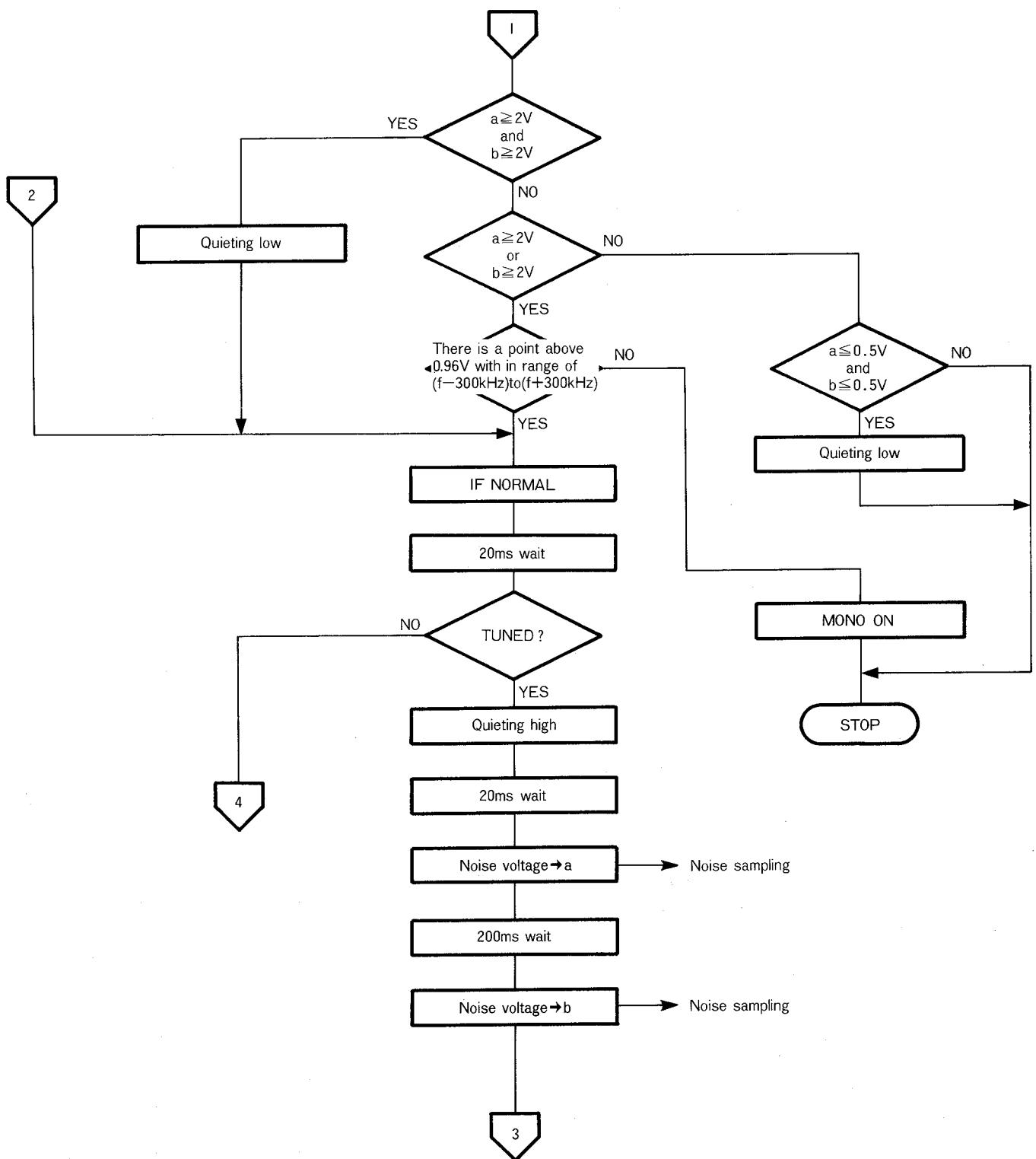
Destination	J	K	X, T, E, L
Item			
Receiving frequency range	76.0~90.0 MHz	87.5~108.0 MHz	87.5~108.0 MHz
Channel space	100 kHz	100 kHz	(AUTO) 50 kHz (MANUAL) { 25 kHz 50 kHz
PLL reference frequency	25 kHz	25 kHz	25 kHz
LOSC frequency	f - 10.7 MHz	f + 10.7 MHz	f + 10.7 MHz
PLL input terminal	FMIN (11 pin)	FMIN (11 pin)	FMIN (11 pin)
PLL IC reference voltage	5 V	5 V	5 V
Band select D40	○	×	×
Band select D41	×	○	×

## CIRCUIT DESCRIPTION

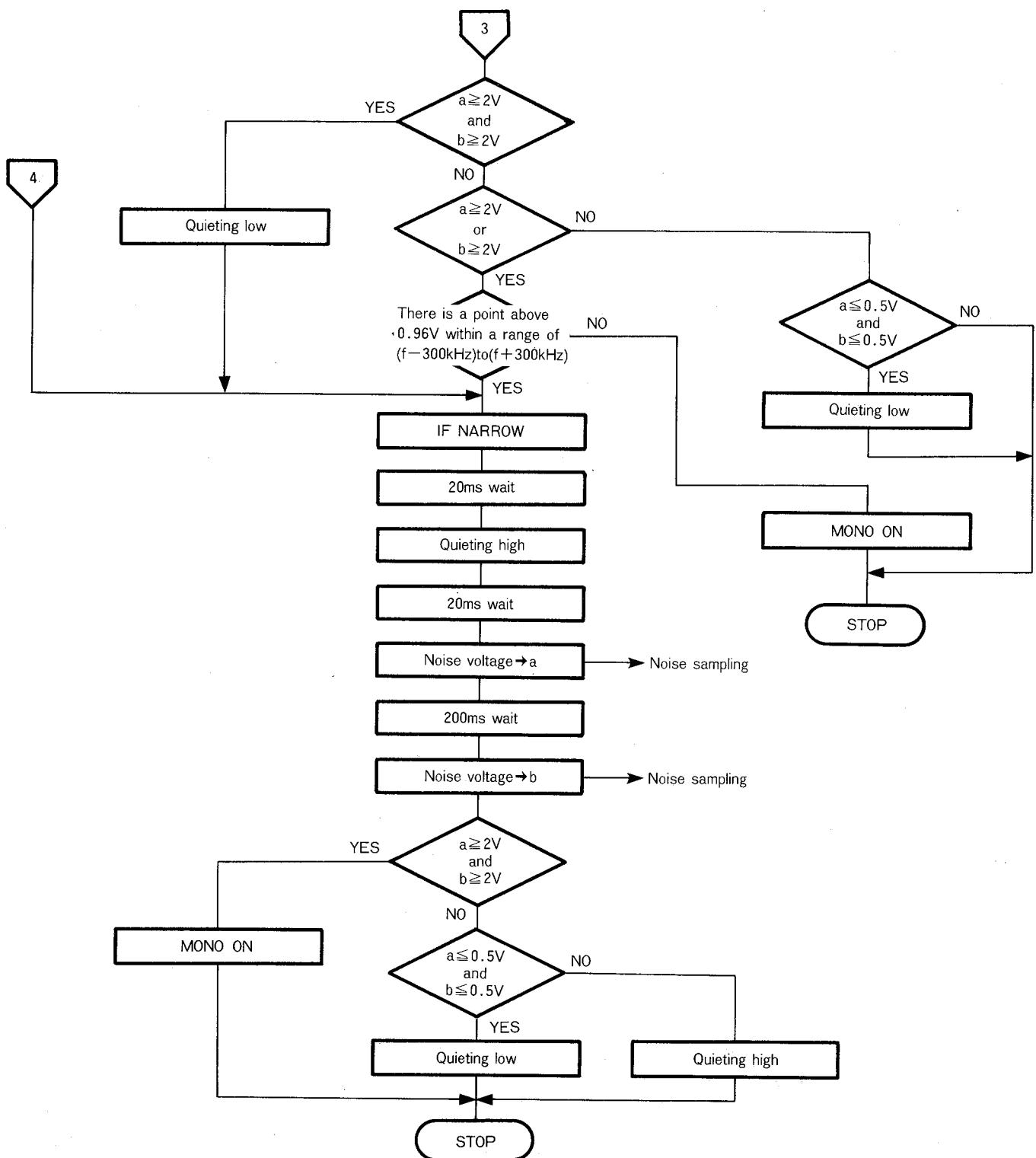
## 3. Flow chart for active reception operation



## CIRCUIT DESCRIPTION



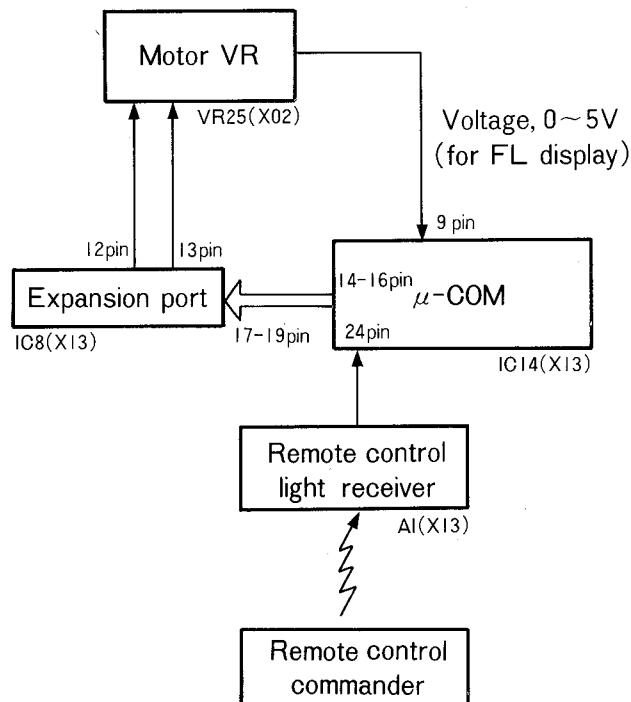
## CIRCUIT DESCRIPTION



# L-1000T

## CIRCUIT DESCRIPTION

### 4. Output level variable

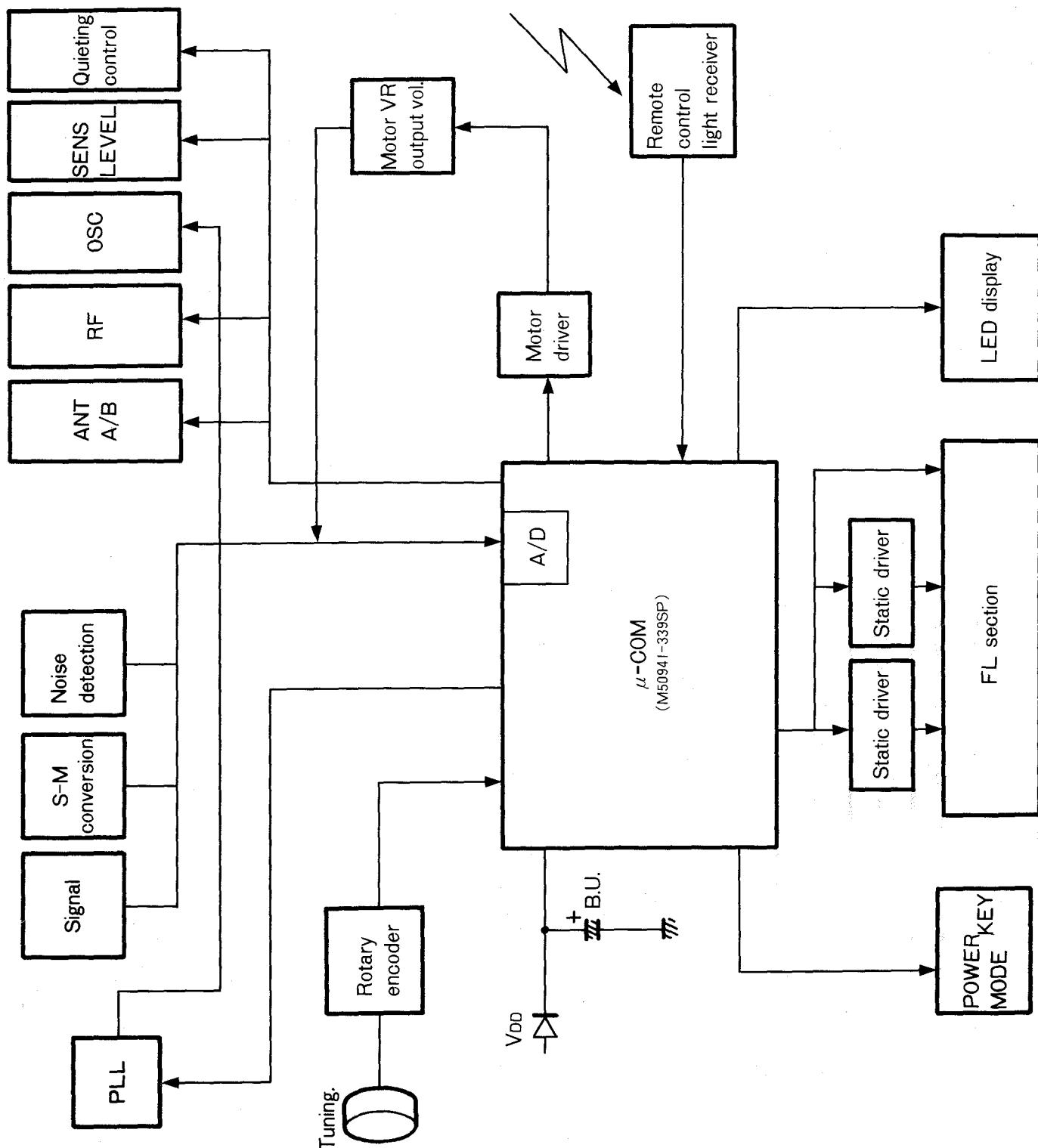


IC8 (X13)	I/O port Pin 12	I/O port Pin 13
OUT LEVEL UP	H	L
OUT LEVEL DOWN	L	H
FIX	L	L

## CIRCUIT DESCRIPTION

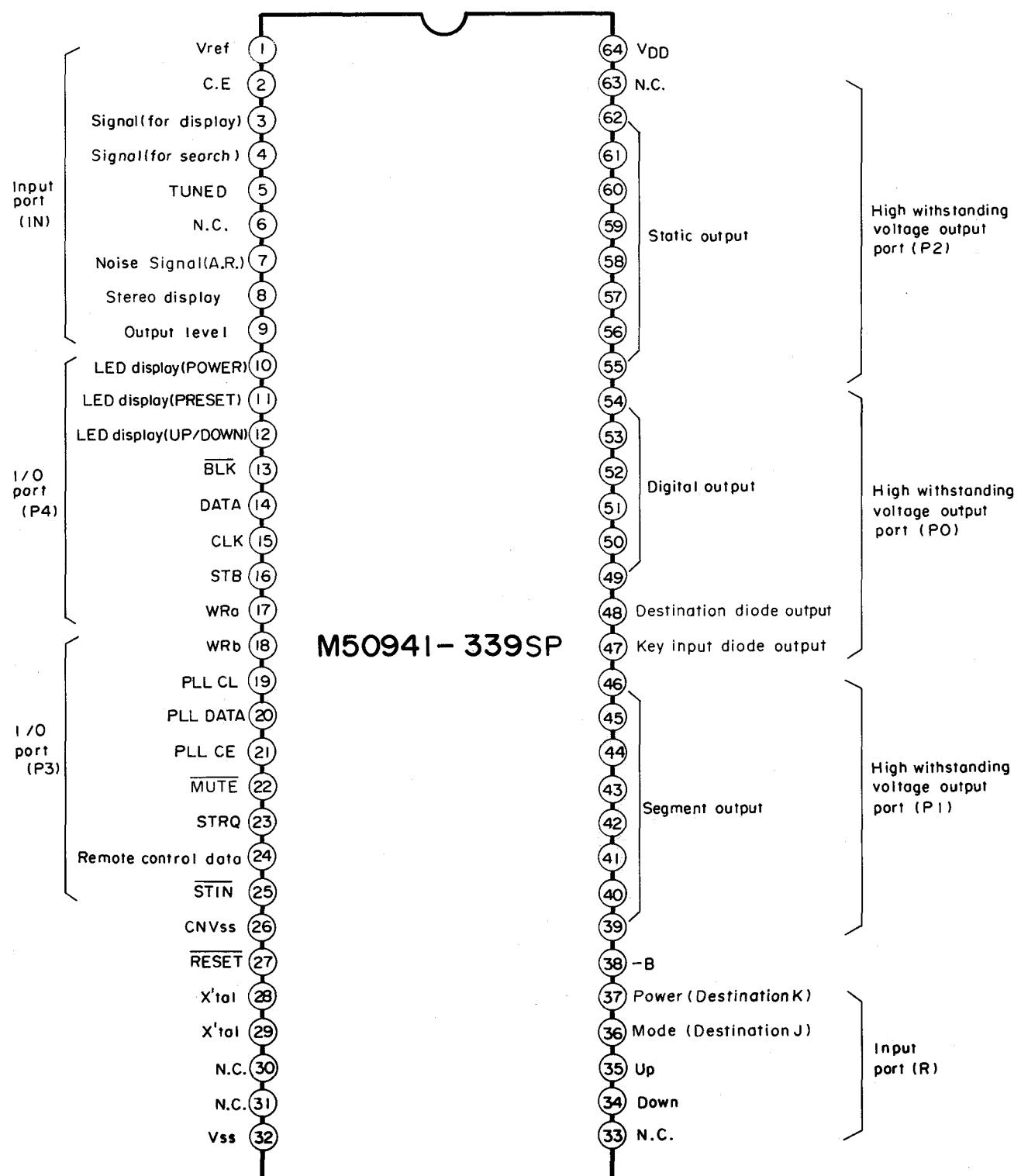
## 5. IC14: M50941-339SP (X13-6452-70) Microprocessor IC

## Microcomputer Peripheral Block Diagram



## CIRCUIT DESCRIPTION

Terminal Connection Diagram



## CIRCUIT DESCRIPTION

## Descriptions of terminals

Pin No.	I/O	Designation	Operational specification
1	I	Vref	A/D's reference voltage input terminal, +5.0V
2	I	C.E.	AC ON = H; AC OFF = L
3	I	SIGNAL DISPLAY	A/D port to display 0 to 100 dB in the FL at an analog input of 0 to 5V.
4	I	SIGNAL SEARCH	A/D port for stop, whose time constant is faster than pin No.3 at an analog input of 0 to 5V.
5	I	TUNED (S-M-conversion)	TUNED = H
6		N.C.	N.C.
7	I	Noise signal (for ACTIVE RECEPTION)	A/D port for analog input of 0 to 5V (0-1.5V = WIDE; 1.5V-2.5V = NORMAL; 2.5V-5V = NARROW)
8	I	ST display	STEREO = L (since this is erroneously lit ON right after switching ON the power supply, however, the display takes AND with TUNED.)
9	I	Output level information	A/D port, 0 to 5V (to be output at VR of the B curve.)
10	O	LED (POWER)	Turning ON the POWER SW outputs H.
11	O	LED (PRESET)	Selecting the PRESET by the rotary encoder outputs H.
12	O	LED (UP/DOWN)	Selecting the UP/DOWN by the rotary encoder outputs H.
13	O	BLK	For the FL driver. Lighting ON = H.
14	O	DATA	For the FL driver. For the expansion port.
15	O	CLK	For the FL driver. For the expansion port.
16	O	STB	For the expansion port.
17	O	WRa	For the FL driver.
18	O	WRb	For the FL driver.
19	O	PLL CL	CLOCK output port for PLL.
20	O	PLL Data	Data output port for PLL. For LM7001.
21	O	PLL CE	CE output port for PLL.
22	O	MUTE	MUTE output terminal. L = MUTE.
23	O	STRQ	STRQ output port for PLL.
24	I	Remote control unit	Remote control data input port.
25	I	STIN	STIN input port for PLL.
26	I	CNVss	Connection to Vss.
27	I	RESET	RESET terminal.
28	I	Xin	Clock (4.19 MHz) input.
29	O	Xout	Clock (4.19 MHz) output.
30	I	Xcin	Connection to Vss.
31	O	Xcout	N.C.
32	I	Vss	Vss

# L-1000T

## CIRCUIT DESCRIPTION

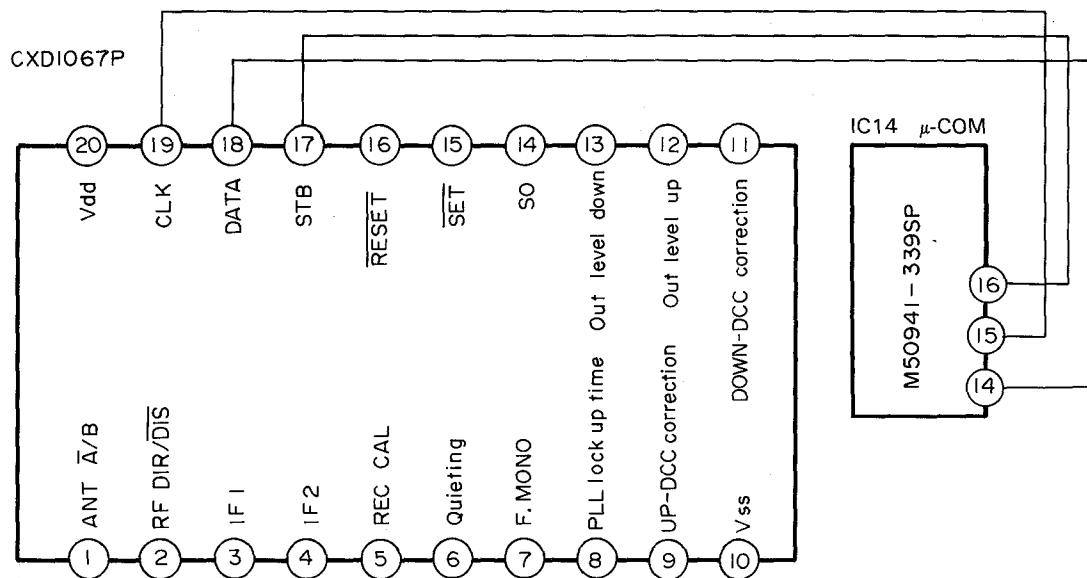
Pin No.	I/O	Designation	Operational specification
33		ϕ	N.C.
34	I	Key input	Rotary encoder input. (DOWN)
35	I	Key input	Rotary encoder input. (UP)
36	I	Key input	47 pin: At H, MODE key input; 48 pin: At H, j-destination.
37	I	Key input	47 pin: At H, POWER key input; 48 pin: At H, K-destination.
38	I	V <sub>p</sub>	—B input terminal.
39	O	P17	Segment output from the dynamic section (for S-meter, 1G-6G.)(P7)
40	O	P16	Segment output from the dynamic section (for S-meter, 1G-6G.)(P6)
41	O	P15	Segment output from the dynamic section (for S-meter, 1G-6G.)(P5)
42	O	P14	Segment output from the dynamic section (for S-meter, 1G-6G.)(P4)
43	O	P13	Segment output from the dynamic section (for S-meter, 1G-6G.)(P3)
44	O	P12	Segment output from the dynamic section (for S-meter, 1G-6G.)(P2)
45	O	P11	Segment output from the dynamic section (for S-meter, 1G-6G.)(P1)
46	O	P10	Segment output from the dynamic section (for S-meter, 1G-6G.)(P0)
47	O	P07	Diode output for key input.
48	O	P06	Destination diode output.
49	O	P05	Digital output from the dynamic section. (1G)
50	O	P04	Digital output from the dynamic section. (2G)
51	O	P03	Digital output from the dynamic section. (3G)
52	O	P02	Digital output from the dynamic section. (4G)
53	O	P01	Digital output from the dynamic section. (5G)
54	O	P00	Digital output from the dynamic section. (6G)
55	O	P27	N.C.
56	O	P26	Static output. (Q0)
57	O	P25	Static output. (Q1)
58	O	P24	Static output. (Q2)
59	O	P23	Static output. (Q3)
60	O	P22	Static output. (Q4)
61	O	P21	Static output. (Q5)
62	O	P20	Static output. (Q6)
63	O	A <sub>Vcc</sub>	Connection to V <sub>dd</sub> .
64	I	V <sub>dd</sub>	V <sub>dd</sub> .

## CIRCUIT DESCRIPTION

## 6. IC8: CXD1067P (X13-6452-70)

## Expansion I/O Ports

## Terminal Connection Diagram



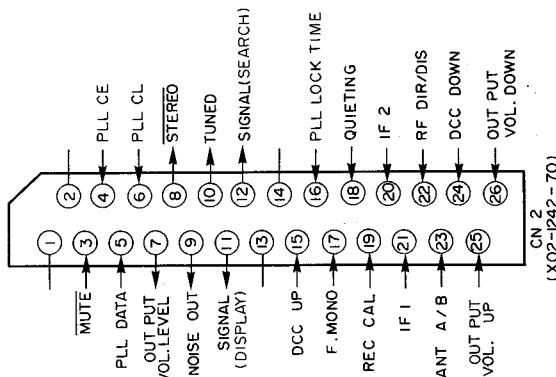
## Descriptions of terminals

Pin No.	I/O	Designation	Operational specification			
1	O	P1	ANT A/B output; L = ANT A H = ANT B			
2	O	P2	RF DIR/DIS output; L = DISTANCE H = DIRECT			
3	O	P3	IF1 output.	WIDE	NOR.	NAR.
			IF1	L	H	H
4	O	P4	IF2 output.	IF2	L	H
			IF2	L	L	H
5	O	P5	REC CAL output; H = REC CAL.			
6	O	P6	Quieting output (high noise = Hi; low noise = Low.)			
7	O	P7	Forced mono output. H = Forced mono.			
8	O	P8	PLL LOCK UP TIME selection output. H = Fast (during search.)			
9	O	P9	UP-DCC correction. H = + 25kHz correction.			
10	I	GND	GND.			
11	O	P10	DOWN-DCC correction. H = - 25kHz correction.			
12	O	P11	OUT LEVEL UP. H = LEVEL UP			
13	O	P12	OUT LEVEL DOWN H = LEVEL DOWN			
14		SO	N.C.			
15	I	SET	PULL UP at Vdd.			
16	I	RESET	Reset terminal. Reset at power ON.			
17	I	STB	STB terminal.			
18	I	Data	Data terminal.			
19	I	CLK	CLK terminal.			
20	I	Vdd	Vdd terminal.			

# L-1000T

## CIRCUIT DESCRIPTION

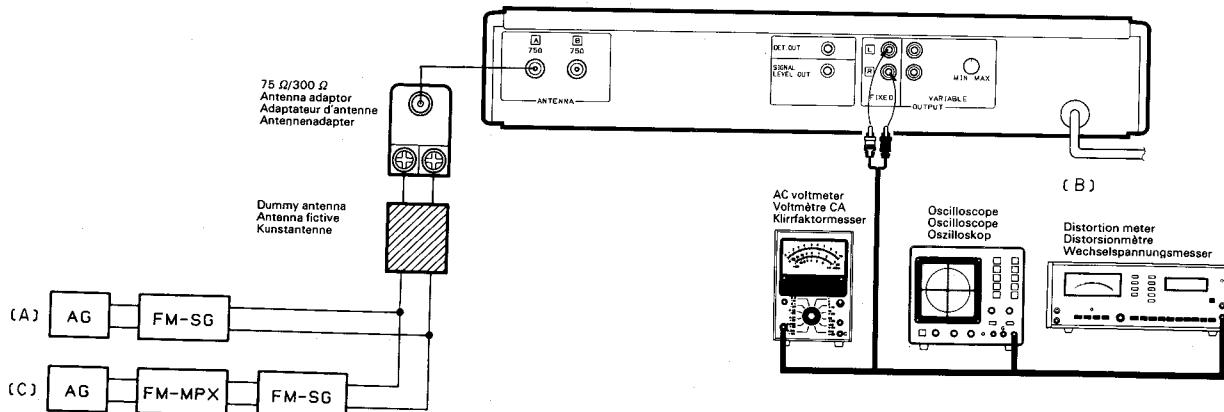
### 7. Descriptions of Terminal Functions of CN2 (X02-1242-70)



Pin No.	I/O	Designation	Operational specification												
1			N.C.												
2			N.C.												
3	I	MUTE	LOW level at MUTE (microcomputer output.)												
4	I	PLL CE	To PLL synthetic IC (microcomputer output.)												
5	I	PLL DATA	To PLL synthetic IC (microcomputer output.)												
6	I	PLL CL	To PLL synthetic IC (microcomputer output.)												
7	O	OUTPUT VOL.LEVEL	To output a DC voltage of 0 to 5V, depending upon the position of variable output motor VR (to the microcomputer's A/D port.)												
8	O	STEREO	LOW at STEREO (to the microcomputer.)												
9	O	NOISE OUT	Noise output of a DC voltage of 0 to 5V, depending upon a size of interference signal (to the microcomputer's A/D port.)												
10	O	TUNED	TUNED = H (to the microcomputer.)												
11	O	SIGNAL (DISPLAY)	A DC voltage for displaying a signal level (center display) to output a DC voltage of 0 to 5V into the microcomputer's A/D port by an antenna input.												
12	O	SIGNAL (SEARCH)	A DC voltage for displaying spectrum analyser (both-side display, i.e. a port to read out a signal level when TUNED becomes HIGH during tuning, by the microcomputer (to the microcomputer's A/D port.)												
13			N.C.												
14			N.C.												
15	I	DCC UP	A signal for correcting strain at the + 25kHz offset = H (microcomputer's out-put.)												
16	I	PLL LOCK TIME	A signal for selecting a time constant during tuning = H (microcomputer's out-put.)												
17	I	F.MONO	Forced mono = H (microcomputer output.)												
18	I	QUIETING	A quieting control signal and a signal for selecting a noise signal time constant at an active reception operation. (microcomputer output.)												
19	I	REC CAL	REC CAL = H (microcomputer output.)												
20	I	IF2	<table border="1"> <tr> <td></td><td>IF1</td><td>IF2</td></tr> <tr> <td>WIDE</td><td>L</td><td>L</td></tr> <tr> <td>NORMAL</td><td>H</td><td>L</td></tr> <tr> <td>NARROW</td><td>H</td><td>H</td></tr> </table>		IF1	IF2	WIDE	L	L	NORMAL	H	L	NARROW	H	H
	IF1	IF2													
WIDE	L	L													
NORMAL	H	L													
NARROW	H	H													
21	I	IF1	(Microcomputer's output.)												
22	I	RF DIR/DIS	RF selection (microcomputer's output.)												
23	I	ANT A/B	ANT A/B selection (microcomputer's output.)												
24	I	DCC DOWN	- 25kHz offset = H (microcomputer's output.)												
25	I	OUTPUT VOL. UP	Motor VR UP = H (microcomputer's output.)												
26	I	OUTPUT VOL. DOWN	Motor VR DOWN = L (microcomputer's output.)												

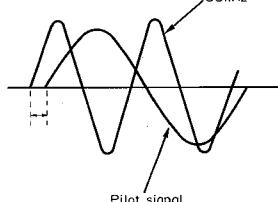
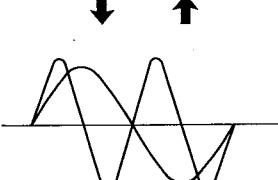
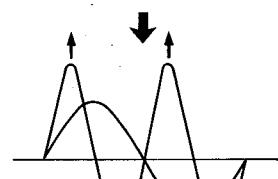
## ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG						
FM SECTION Unless otherwise specified, the individual switches should be set as following: SELECTOR: FM TUNING MODE: AUTO IF BAND: WIDE													
1	V <sub>T</sub> adjustment	—	Connect DC voltmeter between TP15 (V <sub>T</sub> ) and TP14 (GND) (X02).	87.5MHz	L6 (X01)	3.0V ± 50mV	(a)						
2	V <sub>T</sub> adjustment	—	Connect a DC voltmeter between TP15 (V <sub>T</sub> ) and TP14 (GND) (X02).	108.0MHz	TC6 (X01)	25.0V ± 0.1V	(a)						
Repeat the adjustments 1 and 2 above for several times to limit the adjusting error within a specified range.													
3	Tracking	(A) 90.5MHz 1kHz mod. 75kHz dev. 10dB <sub>μ</sub> (ANT input)	(B)	90.5MHz	L1, 2, 3, 4, 5 (X01)	Maximize and optimize the output.							
4	Tracking	(A) 106.5MHz 1kHz mod. 75kHz dev. 10dB <sub>μ</sub> (ANT input)	(B)	106.5MHz	TC1, 2, 3, 4, 5 (X01)	Maximize and optimize the output.							
Repeat the adjustments 3 and 4 above for several times to maximize and optimize the output.													
5	IFT adjustment	(A) 106.5MHz 1kHz mod. 75kHz dev. 10dB <sub>μ</sub> (ANT input)	(B)	106.5MHz	L9, 10, 12 (X01)	Maximize and optimize the output.							
6	PLL DET center voltage	(A) 98MHz Dev. OFF 80dB <sub>μ</sub> (ANT input)	Connect a DC voltmeter between TP7 and GND. (X02)	98MHz <table border="1"><tr><td>DISTANCE</td><td>ON</td></tr><tr><td>WIDE</td><td>ON</td></tr><tr><td>A.R.</td><td>OFF</td></tr></table>	DISTANCE	ON	WIDE	ON	A.R.	OFF	L7 (X02)	Turn the core to adjust the voltage to 0.	(b)
DISTANCE	ON												
WIDE	ON												
A.R.	OFF												
7	Signal voltage	(A) 98MHz 1kHz mod. 40kHz dev. (E-, X-, T-, L-type) 1kHz mod. 75kHz dev. (K-type) 10~70dB <sub>μ</sub> (ANT input)	Do this adjustment by watching the signal level.	98MHz <table border="1"><tr><td>DISTANCE</td><td>ON</td></tr><tr><td>NARROW</td><td>ON</td></tr></table>	DISTANCE	ON	NARROW	ON	VR18 (offset) VR17 (gain) (X02)	① Turn VR18 so that the 1st. point is then lit ON at an ANT input of 10dB <sub>μ</sub> . ② Turn VR17 so that the 7th. point is then lit ON at an ANT input of 70dB <sub>μ</sub> .  Alternatively repeat the adjustments ① and ② above.			
DISTANCE	ON												
NARROW	ON												
8	MPX VCO	(C) 98MHz Pilot/6kHz dev. 80dB <sub>μ</sub> (ANT input)	Connect a frequency counter (high imp.) between TP11 and TP10 to short between TP9 and TP10.	98MHz	VR24 (X02)	Adjust VR24 so as to become 19kHz.	(c)						
9	Pilot PHASE	(C) 98MHz Pilot/6kHz dev. 80dB <sub>μ</sub> (ANT input)	Connect an oscilloscope between TP6 and TP11 and check the resurgence form.	98MHz	L25 (X02)	Adjust the output pilot signal's phase of IC35 to the input signal.	(d)						
10	Pilot cancel	(C) 98MHz Pilot/6kHz dev. 80dB <sub>μ</sub> (ANT input)	Connect an AC voltmeter between TP4 and GND.	98MHz	VR23 L27 (X02)	Adjust VR23 and L27 so as to be minimum level.	(e)						



# L-1000T

## ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG
11	Subcarrier phase level	(C) 98MHz Pilot/6kHz dev. 80dB $\mu$ (ANT input)	Connect an oscilloscope between TP6 (PILOT) and TP3 (38kHz) (dual trace oscilloscope.)	98MHz	L26 (phase) L28 (level) (X02)	<p>To match the 38kHz phase with the input pilot signal.</p>  <p>Runout between phases</p>  <p>Upon finding a phase,</p>  <p>Maximize the 38kHz level. Repeat alignment L26 and L28 several times.</p>	(f)
12	Distortion MONO	(C) 98MHz 1kHz mod. 40kHz dev. (E-, X-, T-, L-type) 1kHz mod. 7.5kHz dev. (K-type) 80dB $\mu$ (ANT input)	(B)	98MHz <input checked="" type="checkbox"/> DISTANCE ON <input checked="" type="checkbox"/> WIDE ON <input type="checkbox"/> A.R. OFF	VR7 (DLLD) VR8 (3rd.) VR11 (2nd.) VR16 (4th.) (X02)	Alternatively turn each VR to minimize the distortion.	
13	Distortion SUB	(C) 98MHz 1kHz mod. 40kHz dev. Pilot/6kHz dev. (E-, X-, T-, L-type) 1kHz mod. 75kHz dev. Pilot/7.5kHz dev. (K-type) 80dB $\mu$ (ANT input)	(B)	98MHz <input checked="" type="checkbox"/> DISTANCE ON <input checked="" type="checkbox"/> WIDE ON <input type="checkbox"/> A.R. OFF	VR10 (3rd.) (X02)	Minimize the distortion.	
14	Distortion L or R	(C) 98MHz 1kHz mod. 40kHz dev. Pilot/6kHz dev. (E-, X-, T-, L-type) 1kHz mod. 75kHz dev. Pilot/7.5kHz dev. (K-type) 80dB $\mu$ (ANT input)	(B)	98MHz <input checked="" type="checkbox"/> DISTANCE ON <input checked="" type="checkbox"/> WIDE ON <input type="checkbox"/> A.R. OFF	VR14 (2nd.) VR15 (4th.) (X02)	Minimize the distortion.	

## ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG
15	Distortion MONO	(C) 98MHz 1kHz mod. 40kHz dev. (E-, X-, T-, L-type) 1kHz mod. 75kHz dev. (K-type) 80dB $\mu$ (ANT input)	(B)	98MHz <b>NORMAL</b> ON	VR2 (3rd.) VR12 (2nd.) (X02)	Minimize the distortion.	
16	Distortion SUB	(C) 98MHz 1kHz mod. 40kHz dev. Pilot/6kHz dev. (E-, X-, T-, L-type) 1kHz mod. 75kHz dev. Pilot/7.5kHz dev. (K-type) 80dB $\mu$ (ANT input)	(B)	98MHz <b>NORMAL</b> ON	VR9 (3rd.) (X02)	Minimize the distortion.	
17	Distortion L or R	(C) 98MHz 1kHz mod. 40kHz dev. Pilot/6kHz dev. (E-, X-, T-, L-type) 1kHz mod. 75kHz dev. Pilot/7.5kHz dev. (K-type) 80dB $\mu$ (ANT input)	(B)	98MHz <b>NORMAL</b> ON	VR13 (2nd.) (X02)	Minimize the distortion.	
18	Distortion SUB	(C) 98MHz 1kHz mod. 40kHz dev. Pilot/6kHz dev. (E-, X-, T-, L-type) 1kHz mod. 75kHz dev. Pilot/7.5kHz dev. (K-type) 80dB $\mu$ (ANT input)	(B)	98MHz <b>NARROW</b> ON	VR4 (X02)	Minimize the distortion.	
19	Distortion + offset (E,X,T,L type only)	(C) 98MHz 1kHz mod. 40kHz dev. 80dB $\mu$ (ANT input)	(B)	98MHz <b>WIDE</b> ON	VR6 (X02)	Minimize the distortion.	
20	Distortion - offset (E,X,T,L type only)	(C) 98MHz 1kHz mod. 40kHz dev. 80dB $\mu$ (ANT input)	(B)	98MHz <b>WIDE</b> ON	VR5 (X02)	Minimize the distortion.	
21	Separation WIDE	(C) 98MHz 1kHz mod. 40kHz dev. Pilot/6kHz dev. (L or R only) (E-, X-, T-, L-type) 1kHz mod. 67.5kHz dev. Pilot/7.5kHz dev. (L or R only) (K-type) 80dB $\mu$ (ANT input)	(B)	98MHz <b>DISTANCE</b> ON <b>WIDE</b> ON <b>A.R.</b> OFF	VR 19 (L ch) VR20 (R ch) (X02)	Optimize the separation.	
22	Separation NORMAL	(C) 98MHz 1kHz mod. 40kHz dev. Pilot/6kHz dev. (L or R only) (E-, X-, T-, L-type) 1kHz mod. 67.5kHz dev. Pilot/7.5kHz dev. (L or R only) (K-type) 80dB $\mu$ (ANT input)	(B)	98MHz <b>NORMAL</b> ON	VR 21 (X02)	Optimize the separation.	
23	Separation NARROW	(C) 98MHz 1kHz mod. 40kHz dev. Pilot/6kHz dev. (L or R only) (E-, X-, T-, L-type) 1kHz mod. 67.5kHz dev. Pilot/7.5kHz dev. (L or R only) (K-type) 80dB $\mu$ (ANT input)	(B)	98MHz <b>NARROW</b> ON	VR 22 (X02)	Optimize the separation.	

Note: Note that turning VR21 after adjusting VR22 changes the NARROW separation.

# PC BOARD (A/3)

A

B

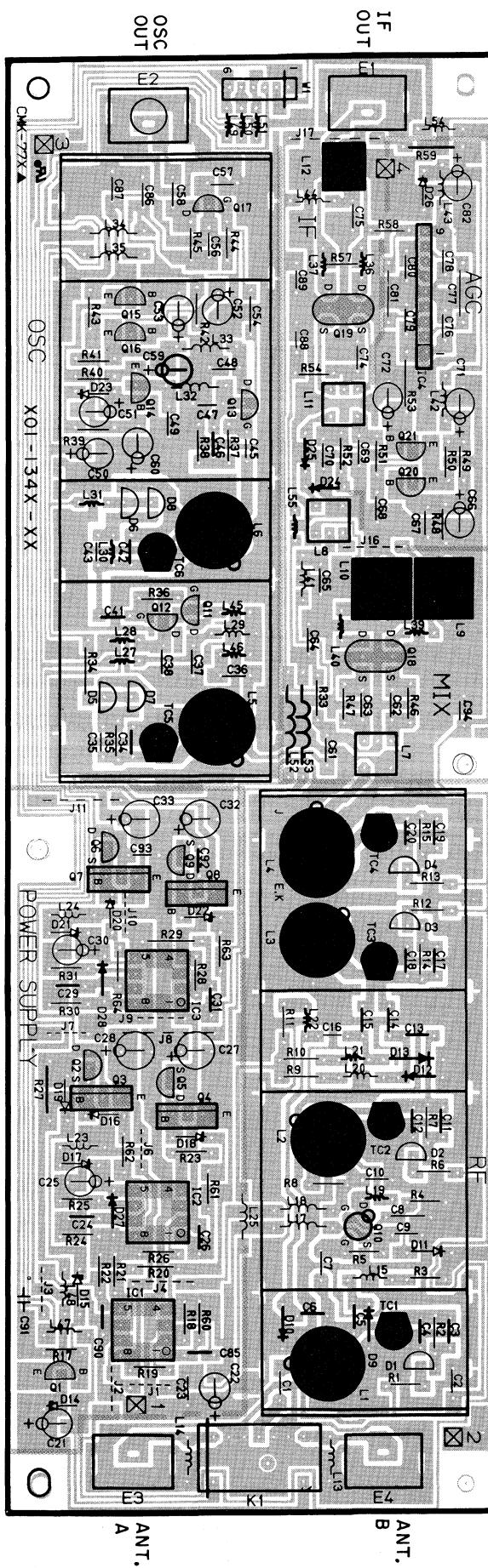
C

D

E

FRONT END UNIT  
(X01-134X-XX)

Ref. No.	Address
IC 1	6B
2	5B
3	5B
4	5C
5	5C
6	4B
7	4B
8	4C
9	4C
10	6C
11	3C
12	3B
13	2C
14	2B
15	2B
16	2B
17	2C
18	3C
19	2C
20	3C
21	3C
1	6B
2	6B
3	5B
4	2C



FRONT END UNIT  
(X01-134X-XX)

FRONT END UNIT (X01-134X-XX)

IC1

1	-6.9V
2,3	0V
4	-10.2V
5	10.2V (DISTANCE)
6	5.1V
7	9.4V
8	10.2V

Q10

G1	0V
G2	-5.1V
D	10.2V
S	-5.2V

Q11

G	0V
D	8.1V
S	0V

Q12

G	-7.7V
D	-8.1V
S	0V
1	2.6V
2,3	0V
4	-10.2V
5,6	5.1V
7	2.0V
8	10.2V

Q13

G	0V
D	7.4V
S	0.7V
1	4.6V
2,3	0V
4	-8.1V
5,6	5.1V
7	0.2V
8	8.1V

Q14

E	-2.9V
C	-0.7V
B	-2.2V

Q15

E	-7.4V
C	-8.1V
B	-8.0V
1	7.4V
2	8.1V
3	8.0V

Q16

E	14.7V
C	-14.8V
B	14.0V

Q17

G	-8.0V
D	2.1V
S	-8.0V

Q18

G	1.0V 2.0V
D	1.10.2V 2.10.2V
S	1.2.6V 2.2.6V
1	10.2V

Q19

G	1.0V 2.0V
D	1.10.2V 2.10.2V
S	1.2.0V 2.2.0V

Q20

E	4.9V
C	0.8V
B	4.2V

Q21

E	4.9V
C	0V
B	8.3V

Q22

Q23

Q24

Q25

Q26

Q27

Q28

Q29

Q30

Q31

Q32

Q33

Q34

Q35

Q36

Q37

Q38

Q39

Q40

Q41

Q42

Q43

Q44

Q45

Q46

Q47

Q48

Q49

Q50

Q51

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Q140

Q141

Q142

Q143

Q144

Q145

Q146

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Q153

Q154

Q155

Q156

Q157

Q158

Q159

Q160

Q161

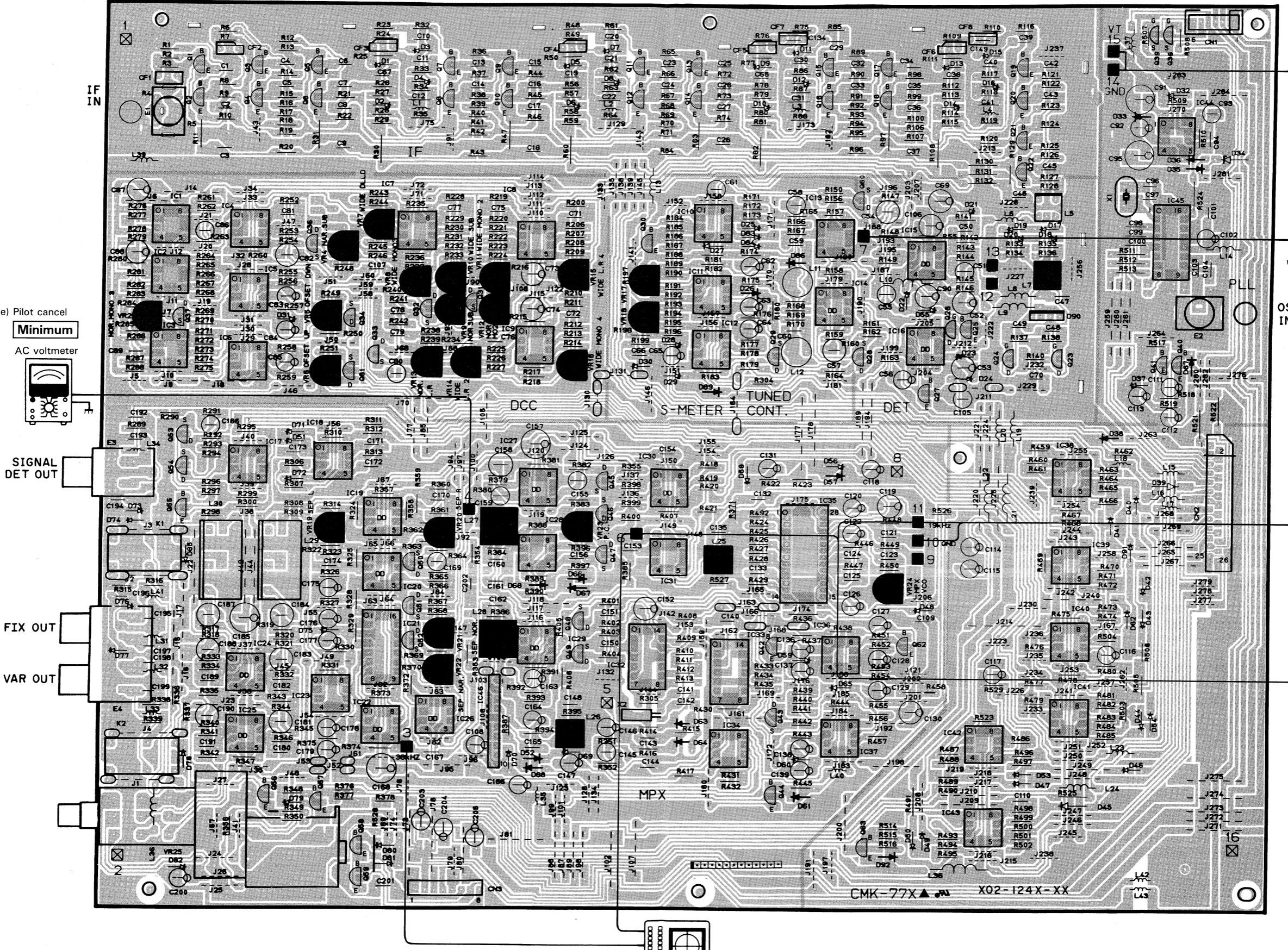
Q162

Q163

Q164

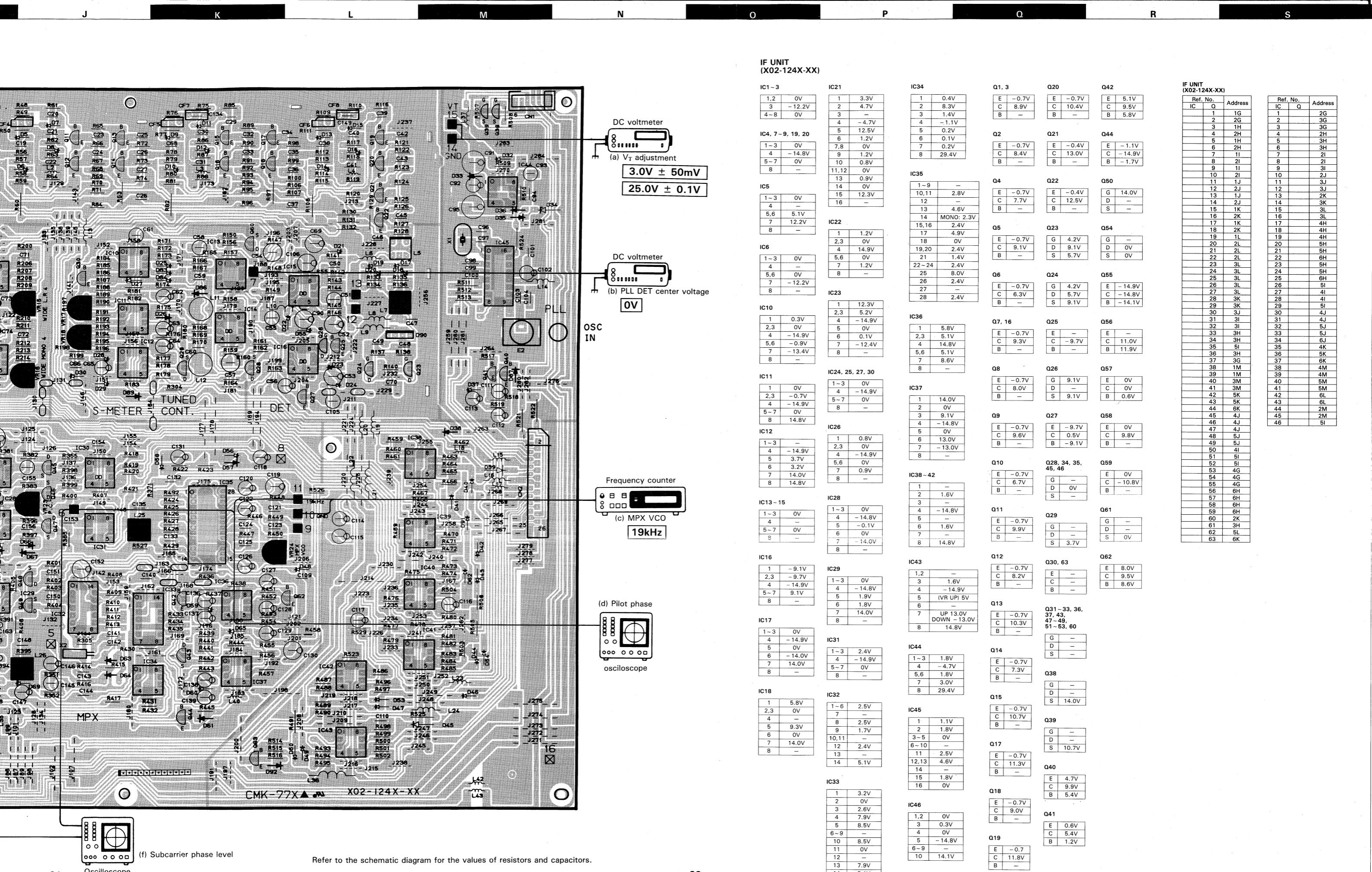
# PC BOARD (B/3)

## IF UNIT (X02-124X-XX)



Refer to the schematic diagram for the values of resistors and capacitors.

IF UNIT (X02-124X)	
IC1 - 3	1, 2 0V 3 -12V 4 -8V
IC4, 7 - 9, 19,	1 - 3 0V 4 -14V 5 - 7 0V 8 -
IC5	1 - 3 0V 4 5.1V 7 12.2V 8 -
IC6	1 - 3 0V 4 - 5, 6 0V 7 -12.0V 8 -
IC10	1 0.3V 2, 3 0V 4 -14.5V 5, 6 -0.9V 7 -13.4V 8 -
IC11	1 0V 2, 3 -0.7V 4 -14.5V 5 - 7 0V 8 14.8V
IC12	1 - 3 - 4 -14.5V 5 3.7V 6 3.2V 7 14.0V 8 14.8V
IC13 - 15	1 - 3 0V 4 - 5 - 7 0V 8 -
IC16	1 -9.1V 2, 3 -9.7V 4 -14.9V 5 - 7 9.1V 8 -
IC17	1 - 3 0V 4 -14.9V 5 0V 6 -14.0V 7 14.0V 8 -
IC18	1 5.8V 2, 3 0V 4 - 5 9.3V 6 0V 7 14.0V 8 -

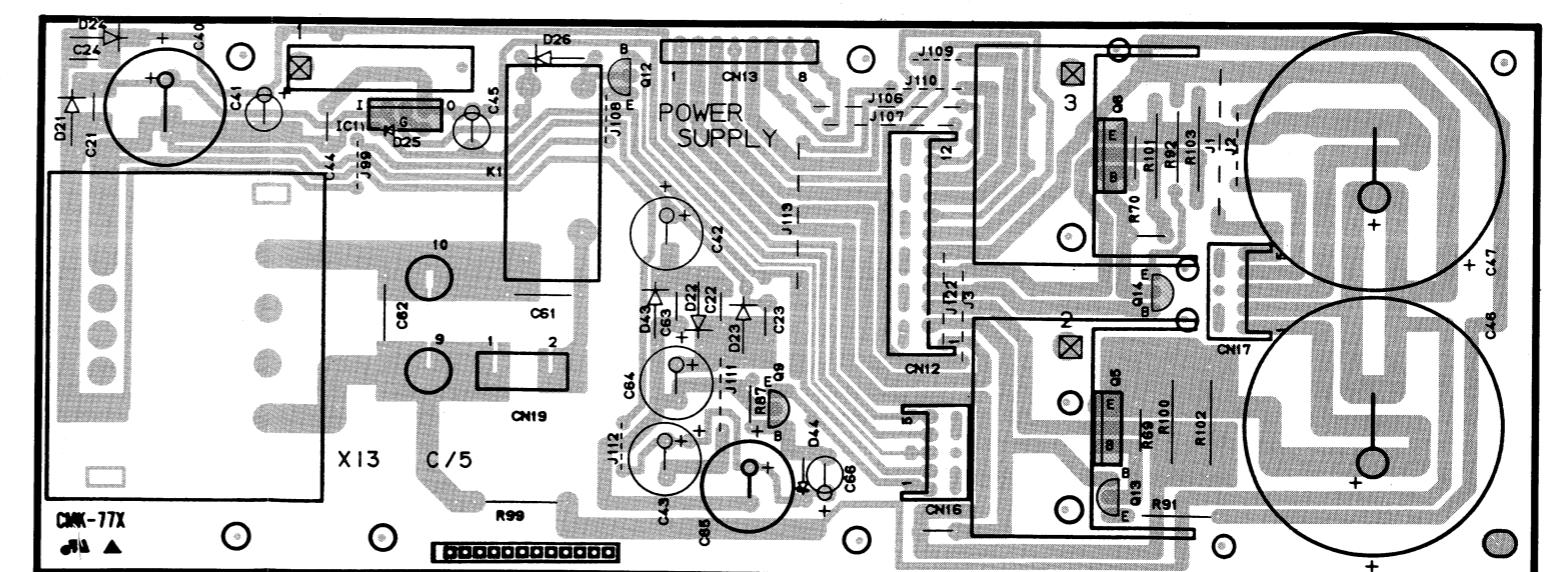
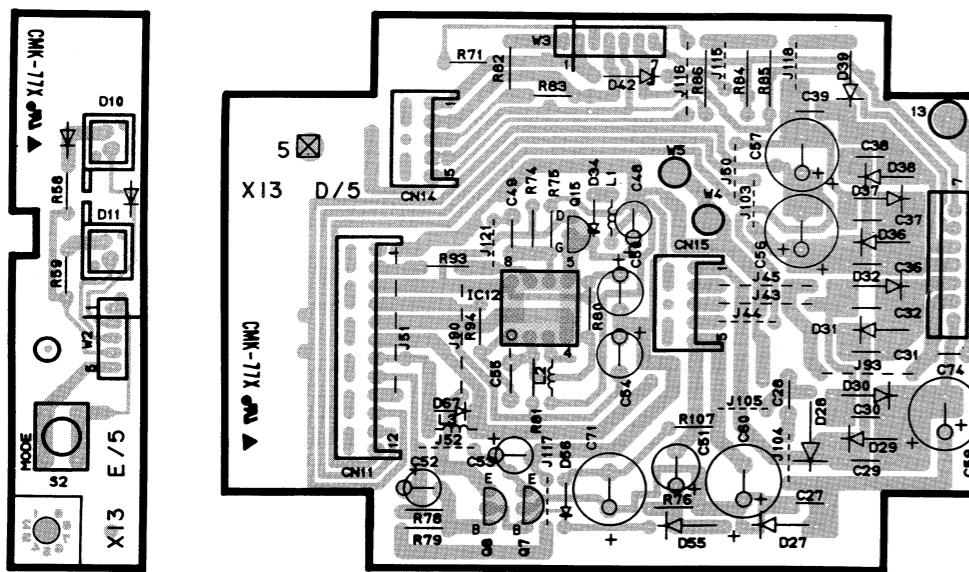
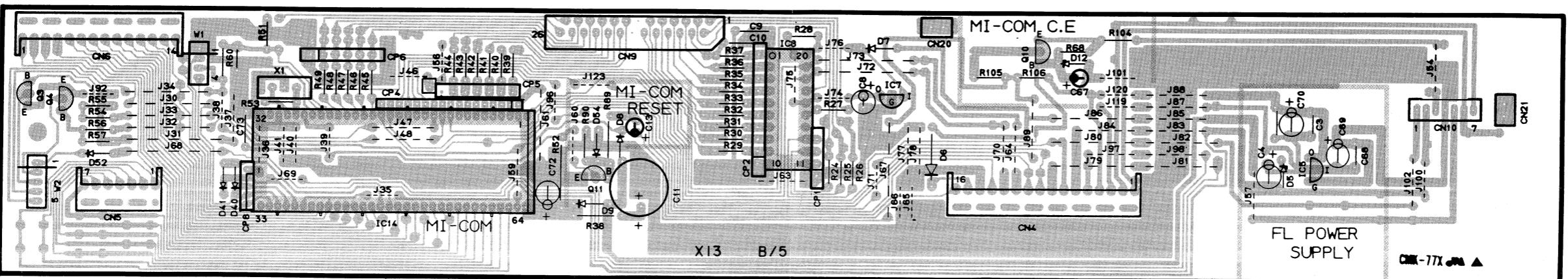
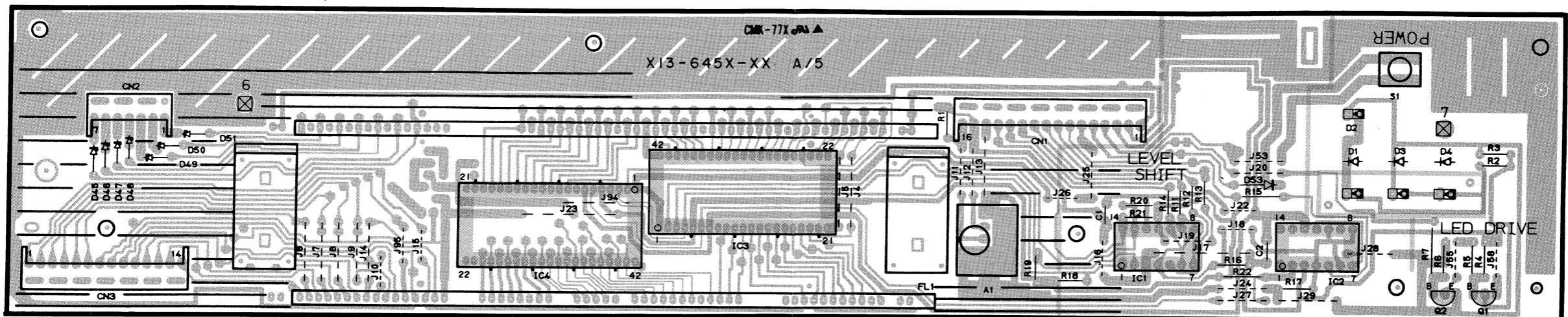


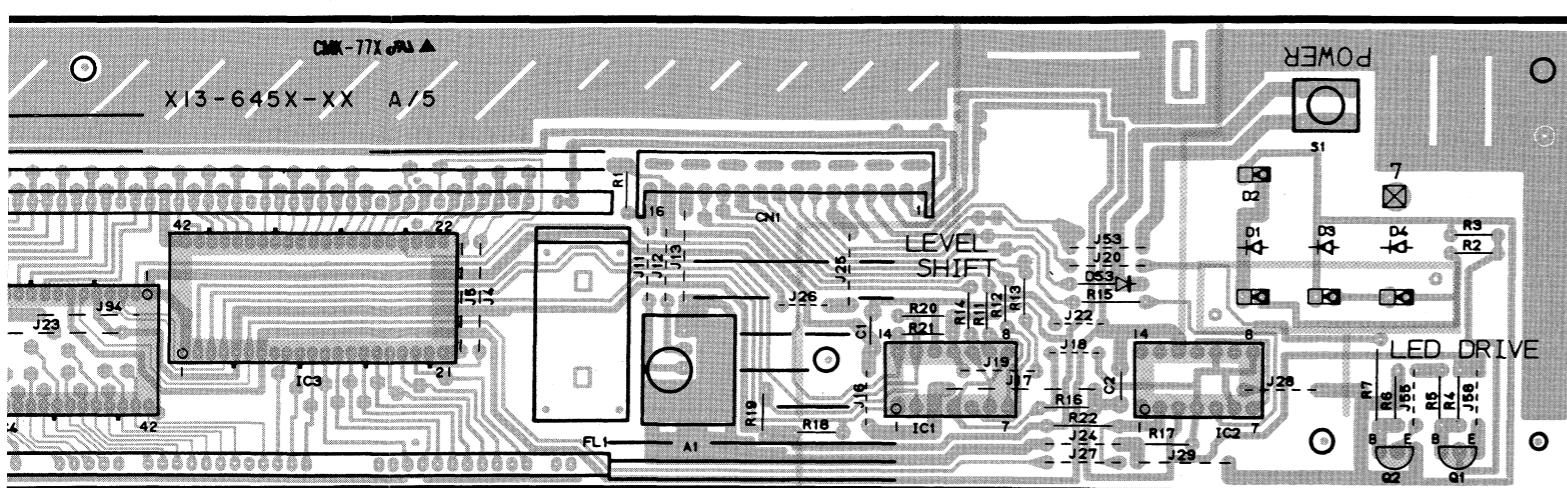
T U V W X Y Z AA AB AC

1

PC BOARD (C/3)

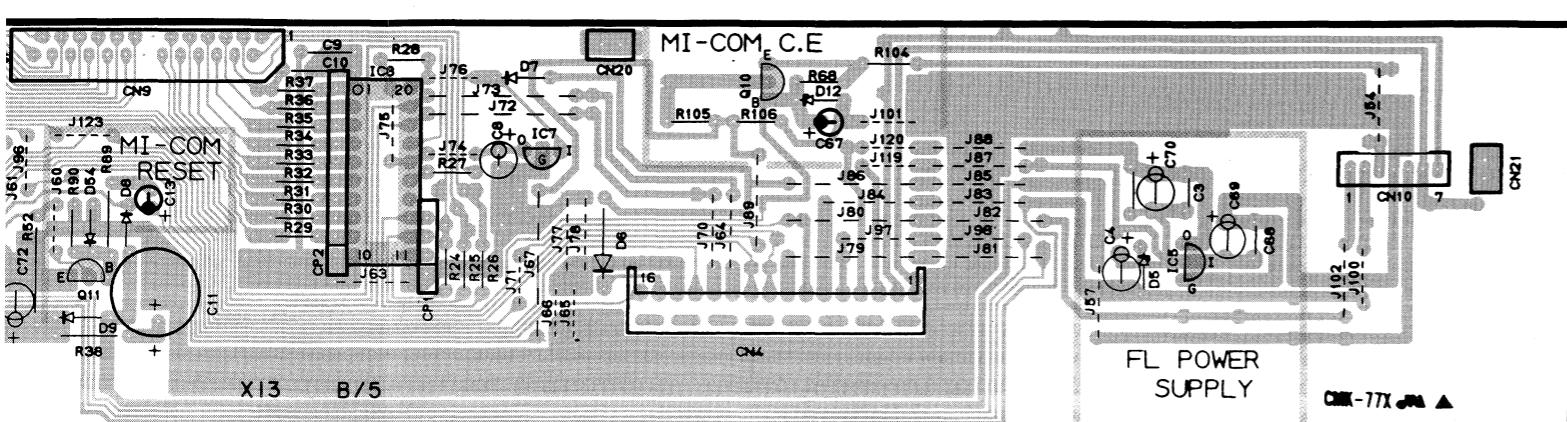
SUB-CIRCUIT UNIT (X13-645X-XX)



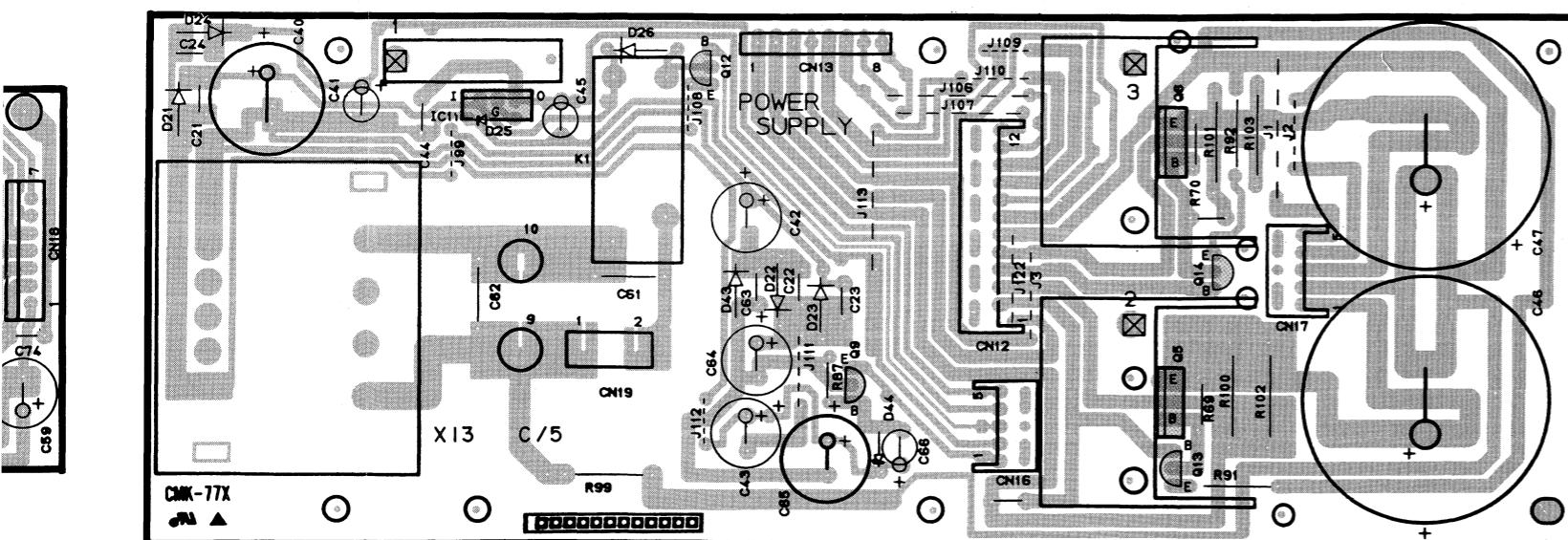


**SUB CIRCUIT UNIT  
(X13-645X-XX)**

SUB-CIRCUIT UNIT (X13-645X-XX)		
Ref. No.	IC	Address
	1	3AB
	2	3AA
	3	4T
	4	4U
	5	7AA
	6	6AA
	7	7V
	8	7V
	9	6Z
	10	4Y
	11	4W
	12	5Y
	13	7AA
	14	6AA
	15	6V
1		2Z
2		2AA
3		2X
4		2W
5		4AA
7		4Y
8		4X
11		5Y
12		6V
14		4V



The image shows a portion of a printed circuit board (PCB) layout. It features several component pads labeled with part numbers: J88, J87, J85, J83, J82, J98, J81, J57, C70, C3, D5, IC6, and IC5. The layout includes various connection lines and vias, with some lines being thicker than others to indicate power or ground rails. The text 'FL PO SUPER' is printed at the bottom right of the board area.



Refer to the schematic diagram for the values of resistors and capacitors.

IC1	
1	ON 5.0V OFF 14.7V
2	—
3	5.0V
4	2.5V
5	—
6	2.5V
7	—
8	2.5V
9	—
10	2.5V
11	—
12	— 16.7V
13,14	—

IC2	
1,2	—
3	5.0V
4	2.5V
5	—
6	2.5V
7	—
8	2.5V
9	—
10	2.5V
11	—
12	— 16.7V
13,14	—

IC3,4	
1	— 29.8V
2,3	—
4	ON 5.0V OFF 14.7V
5	— 11.6V
6	—
7	— 11.6V
8-42	—

IC5	
IN	— 16.6V
OUT	— 11.6V
GND	—

IC7	
IN	5.2V
OUT	5.2V
GND	—

IC8	
1-17	—
18	ON 5.0V OFF 1.5V
19	—
20	5.2V

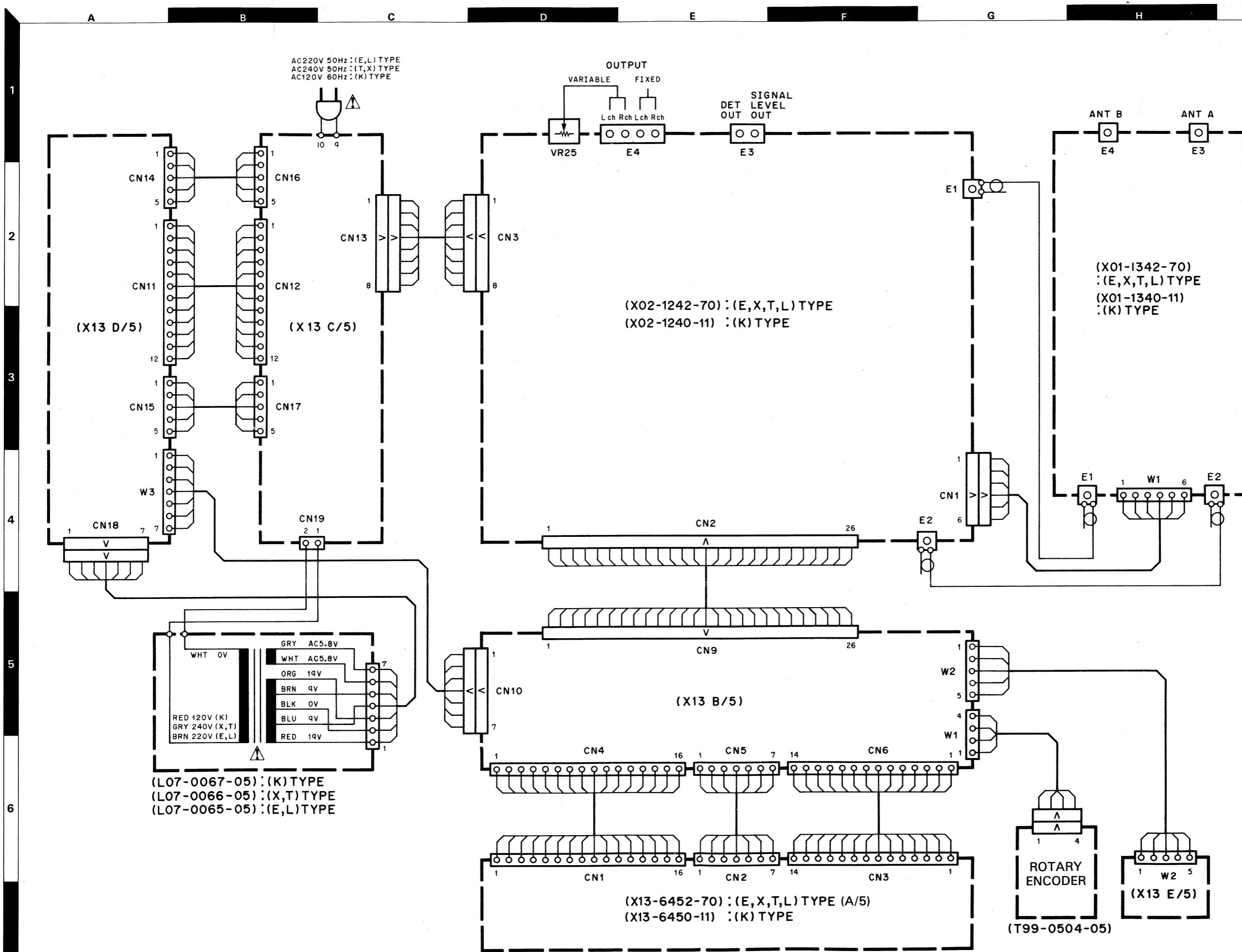
IC11	
IN	10.9V
OUT	5.7V
GND	0.6V

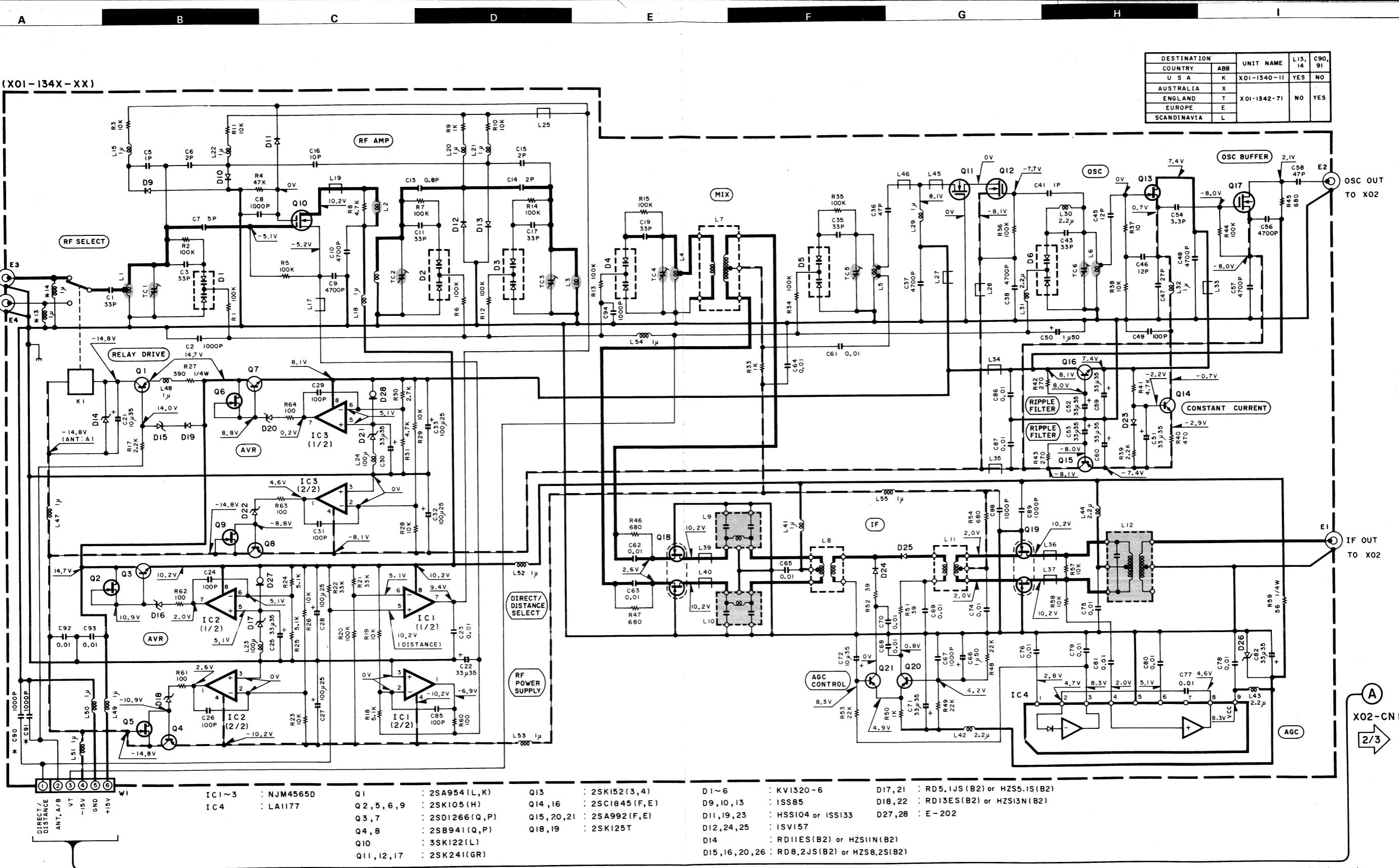
  

IC12	
1	— 2.4V
2,3	0V
4	— 14.9V
5,6	5.3V
7	3.6V
8	14.8V

IC14	
1	5.1V
2-26	—
27	5.0V
28-37	—
38	5.0V
39-63	—
64	5.0V



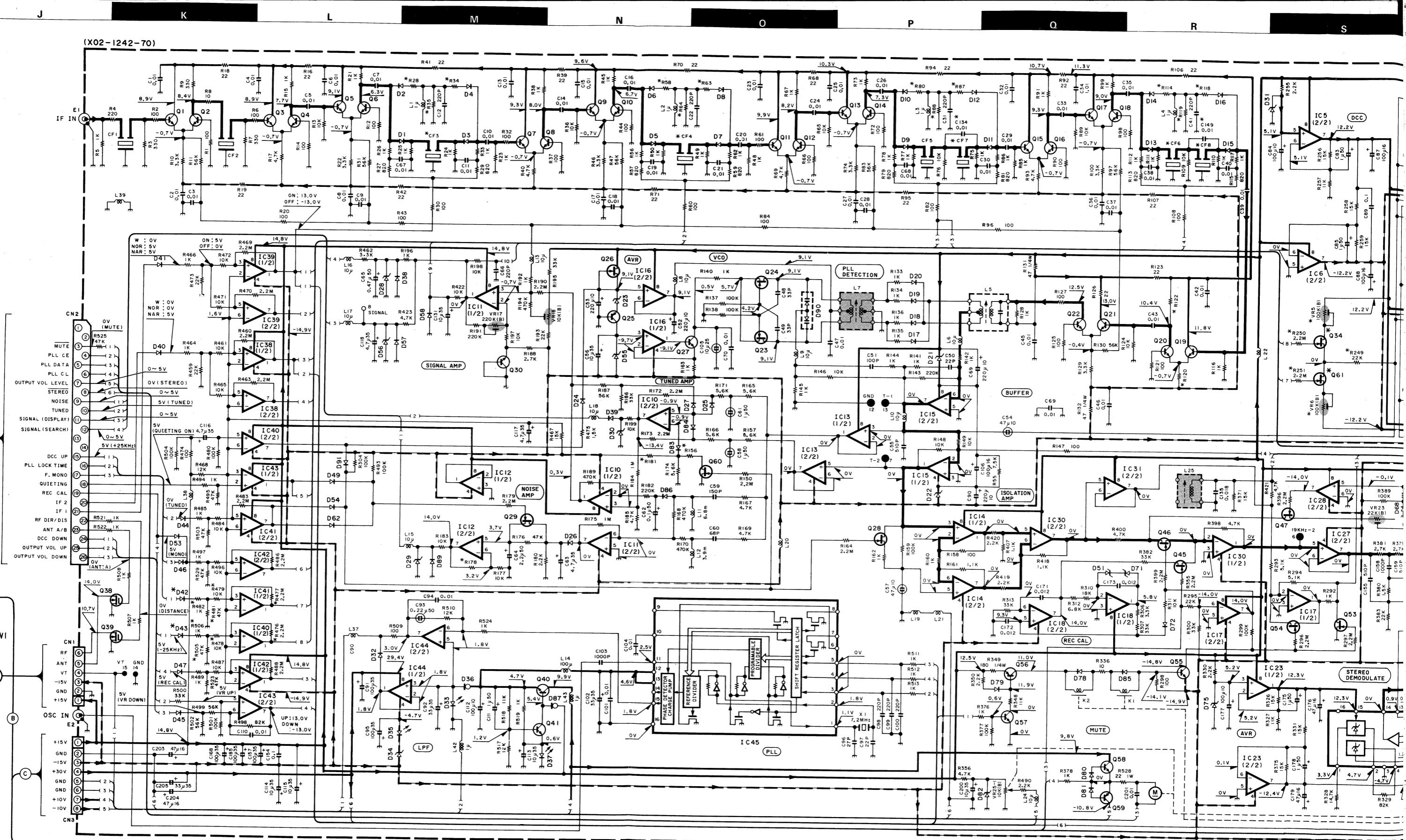


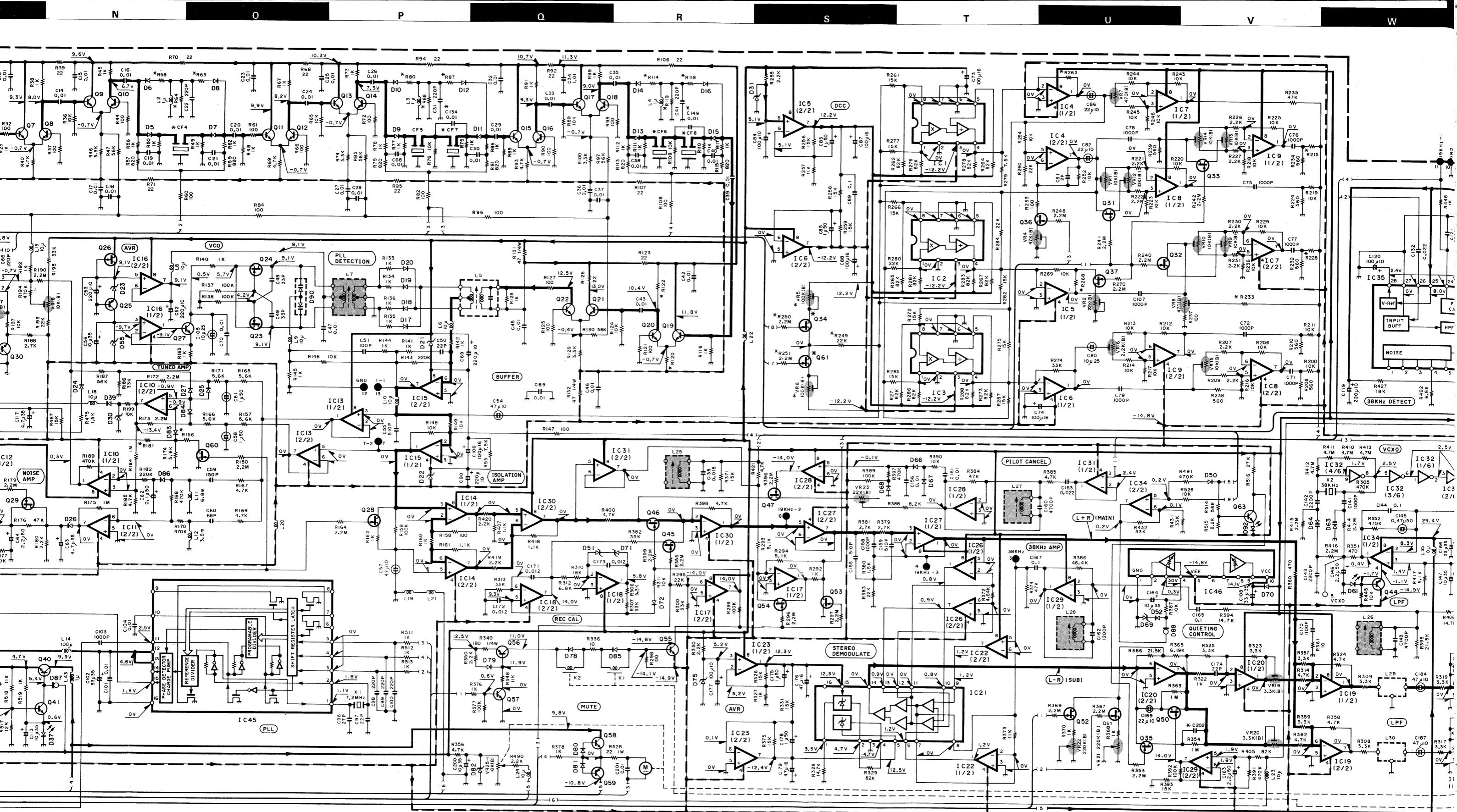
DC voltages are as measured with a high-impedance voltmeter during reception of the FM broadcast signal (with a signal strength of 60 dB at the ANT terminal). Values may vary slightly due to variations between individual instruments or/and units. Values in parentheses are as measured during reception of the AM broadcast signal (with a signal strength of 60 dB at the ANT terminal).

**CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.**

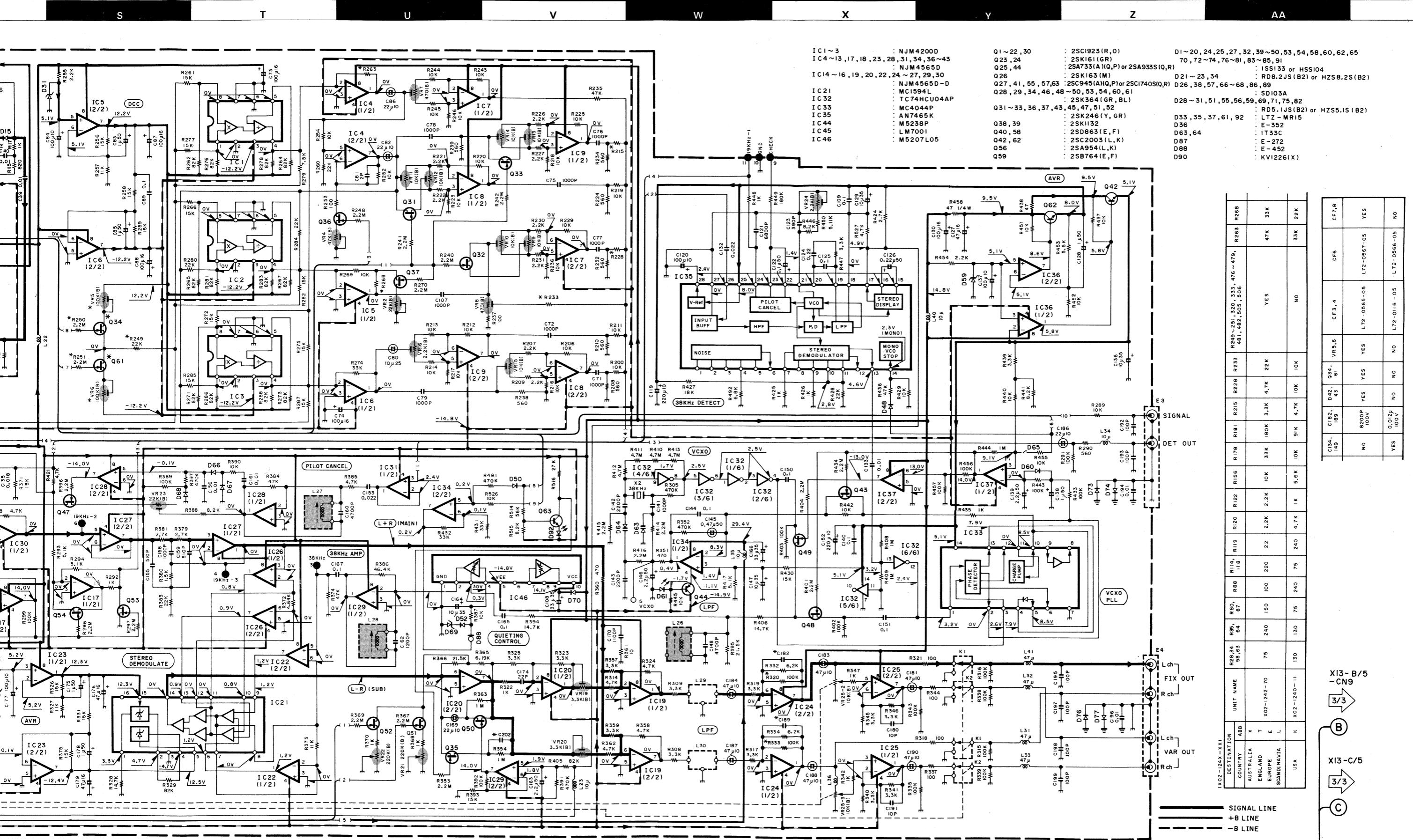
Y07-3322-70

**L-1000T**  
KENWOOD





DC voltages are as measured with a meter during reception of the FM signal strength of 60 dB at the Values may vary slightly due to individual instruments or/and units. are as measured during reception signal (with a signal strength of terminal).



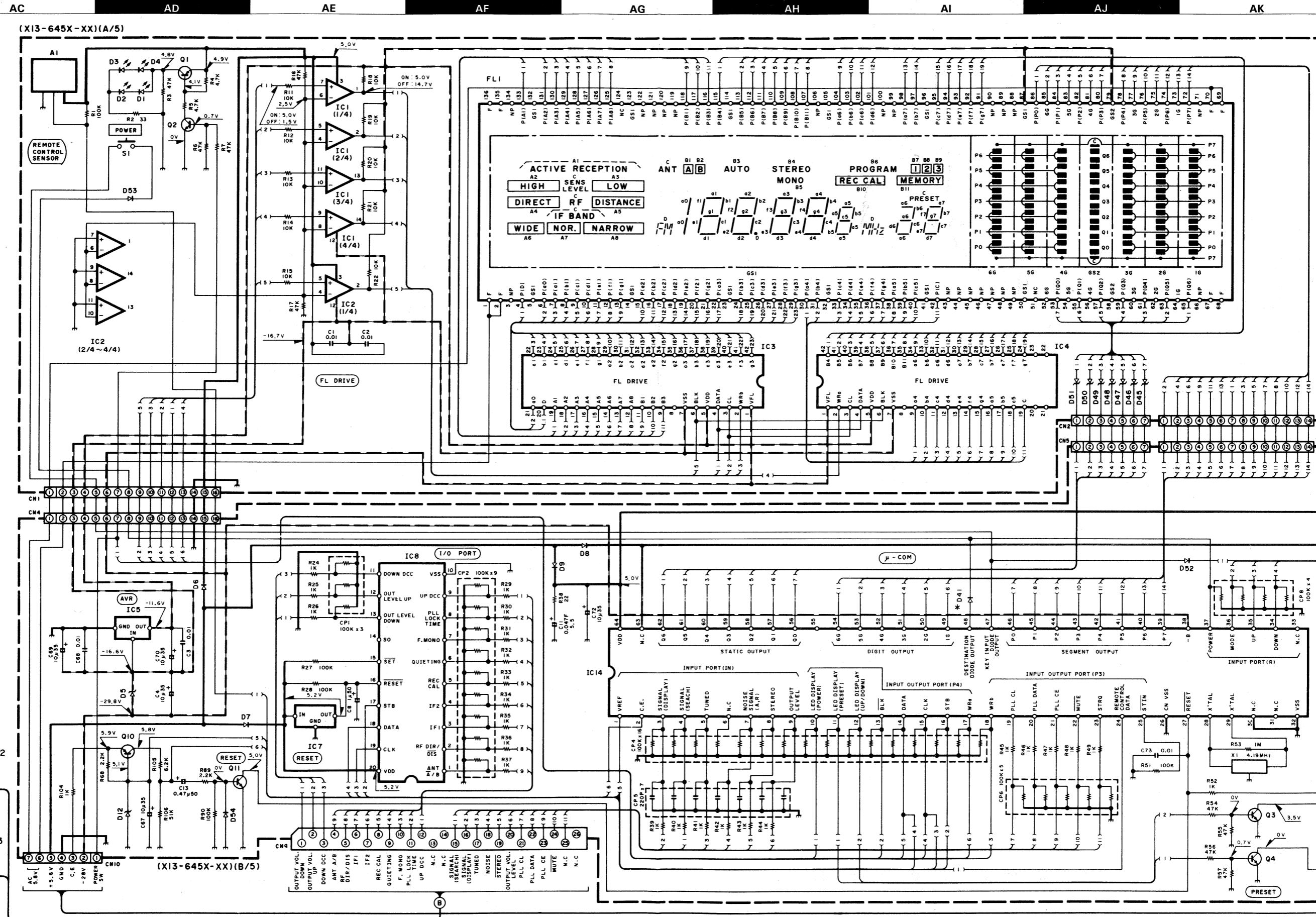
DC voltages are as measured with a high-impedance voltmeter during reception of the FM broadcast signal (with a signal strength of 60 dB at the ANT terminal). Values may vary slightly due to variations between individual instruments or/and units. Values in parentheses are as measured during reception of the AM broadcast signal (with a signal strength of 60 dB at the ANT terminal).

**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

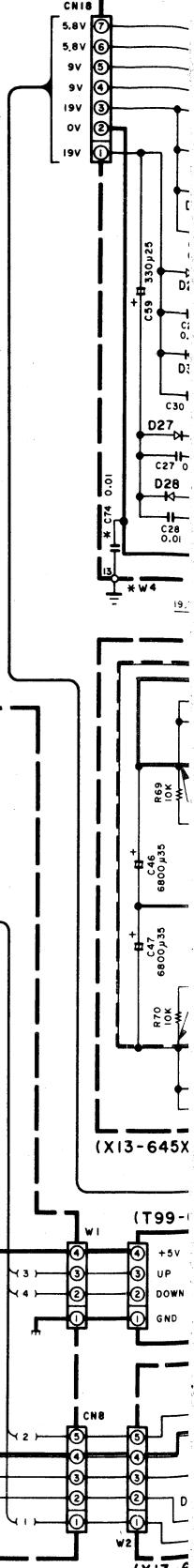
L = 1000 T(E) (2/3)

# L-1000T

## KENWOOD

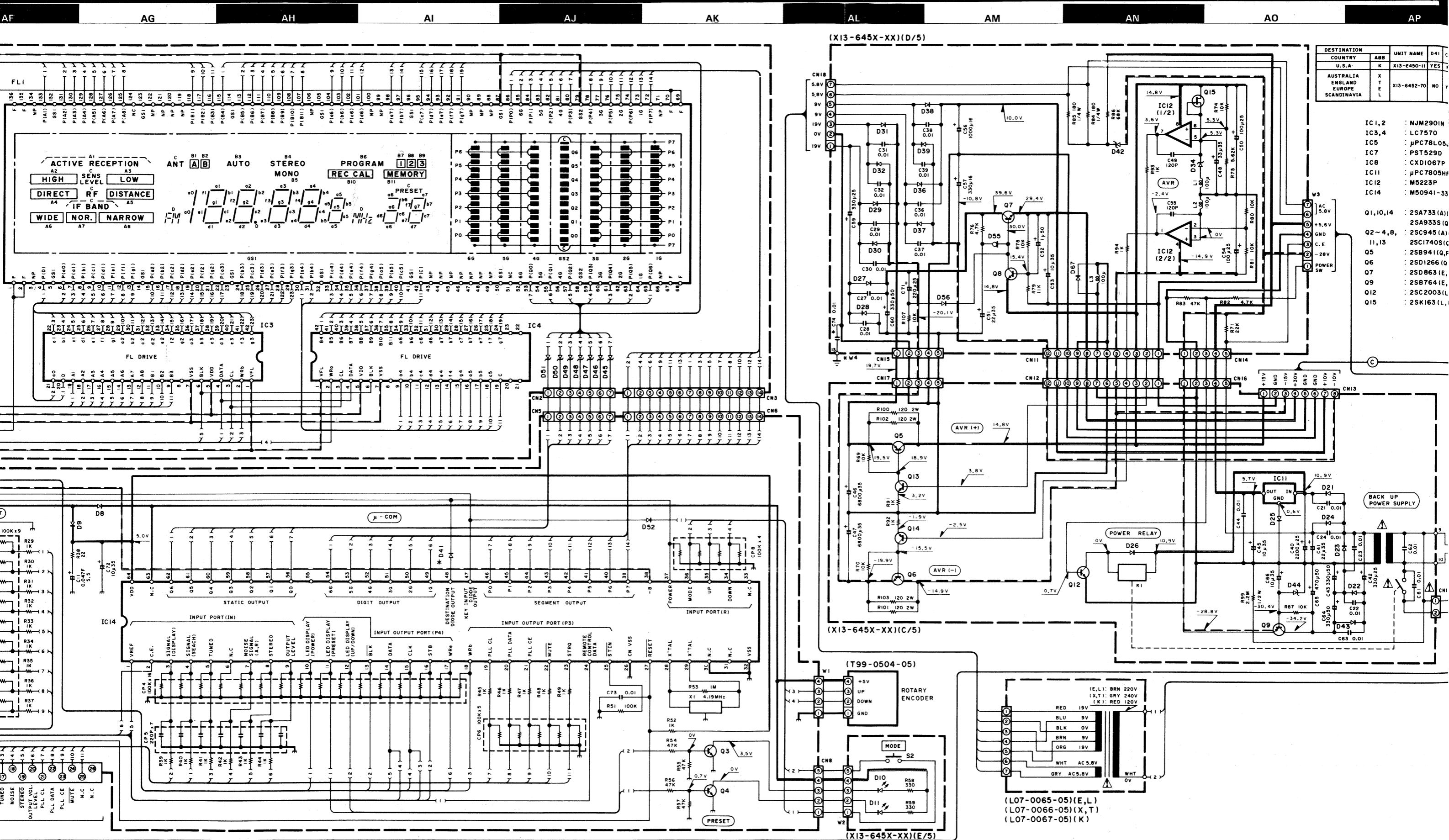


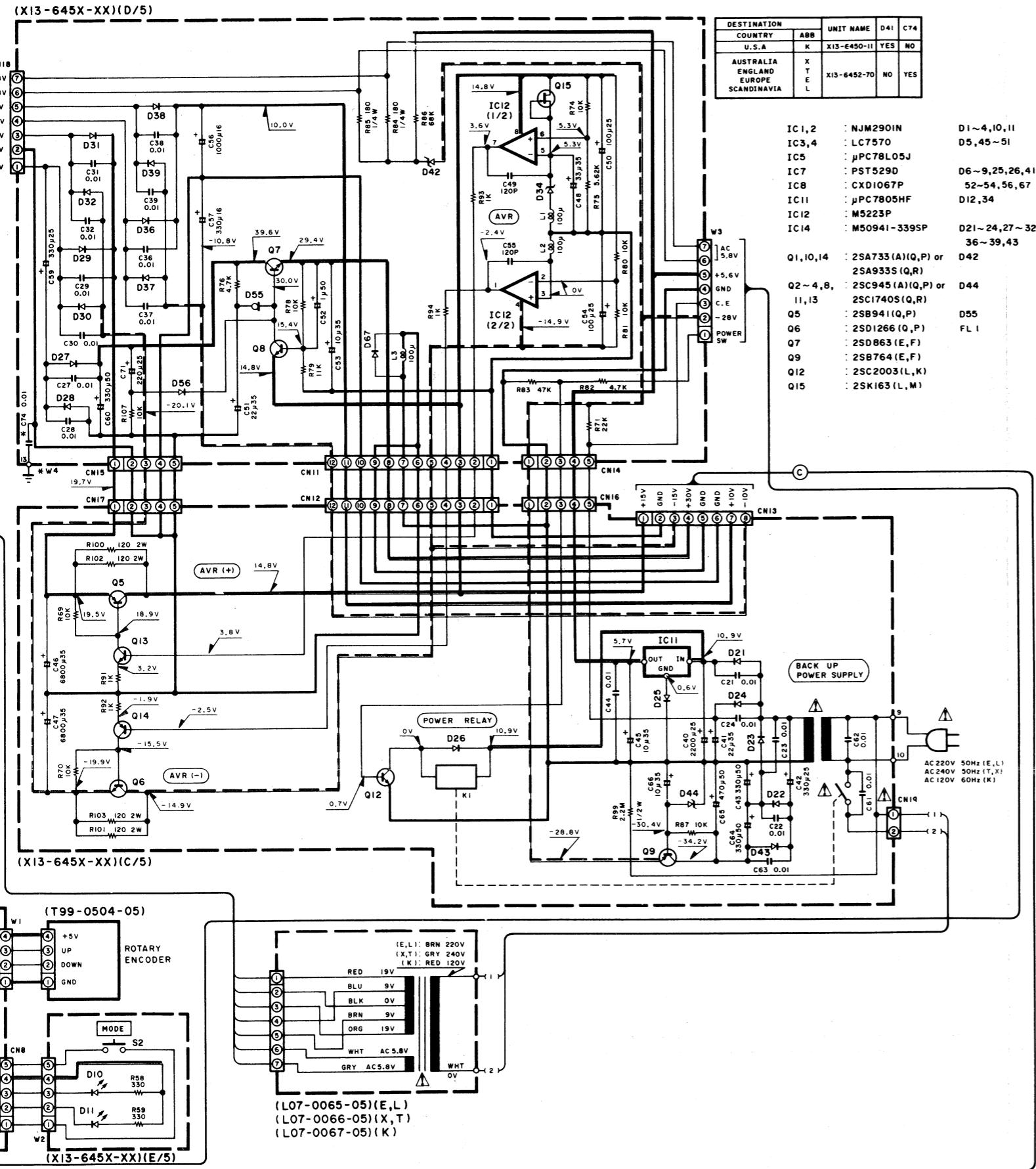
**(X13-645)**



**(X13-645X)**

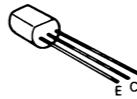
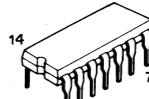
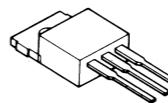
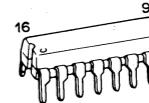
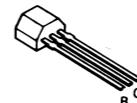
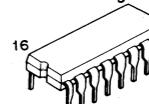
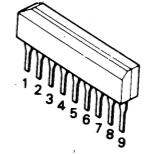
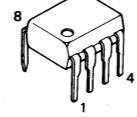
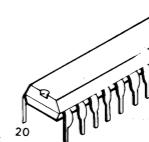
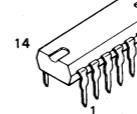
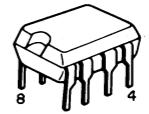
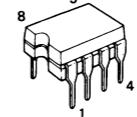
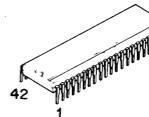
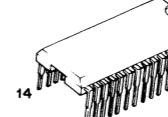
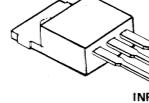
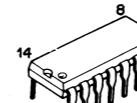
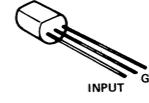
**(T99-1)**





DESTINATION		UNIT NAME	D4I	C74
COUNTRY	ABB			
U.S.A	K	X13-E450-II	YES	NO
AUSTRALIA	X			
ENGLAND	T			
EUROPE	E	X13-6452-70	NO	YES
PALESTINIA	L			

L-1000T(E)(3/3)

2SA733		MC4044P TC74HCU04AP	
2SA954			
2SA992			
2SB764			
2SC1845			
2SC1923			
2SC2003			
2SC945			
2SD863			
2SD1266		LM7001	
2SA933S			
2SC1740S		MC1594L	
2SB941		LA1177	
NJM4200D		CXD1067P	
M5207L05		M5223P NJM4565D NJM4565D-D	
M5238P		LC7570	
AN7465K		$\mu$ PC7805HF	
NJM2901N		PST529D	
			

DC voltages are as measured with a high-impedance voltmeter during reception of the FM broadcast signal (with a signal strength of 60 dB at the ANT terminal). Values may vary slightly due to variations between individual instruments or/and units. Values in parentheses are as measured during reception of the AM broadcast signal (with a signal strength of 60 dB at the ANT terminal).

**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

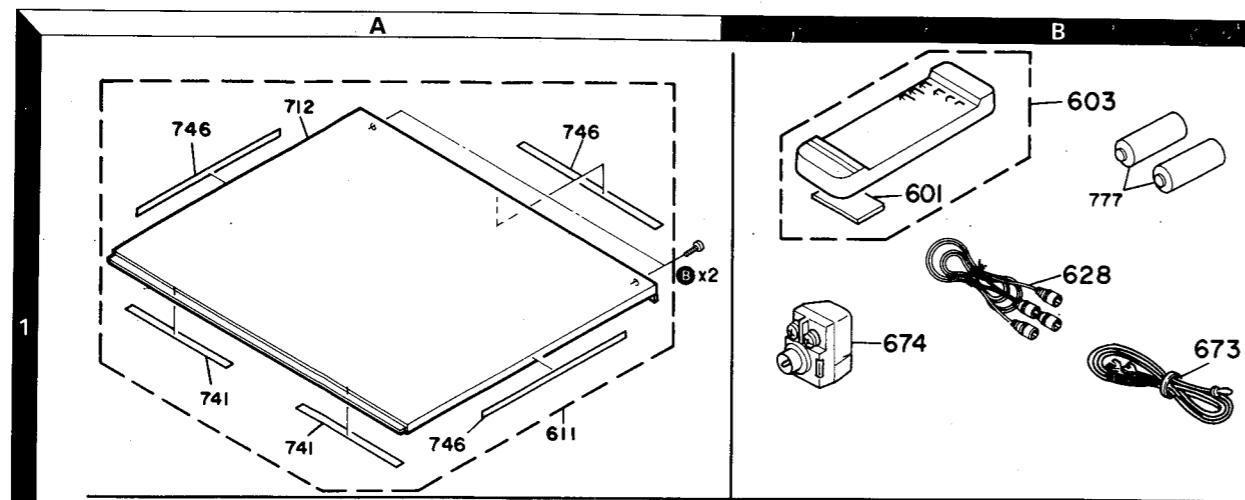
Y07-3322-70

# L-1000T

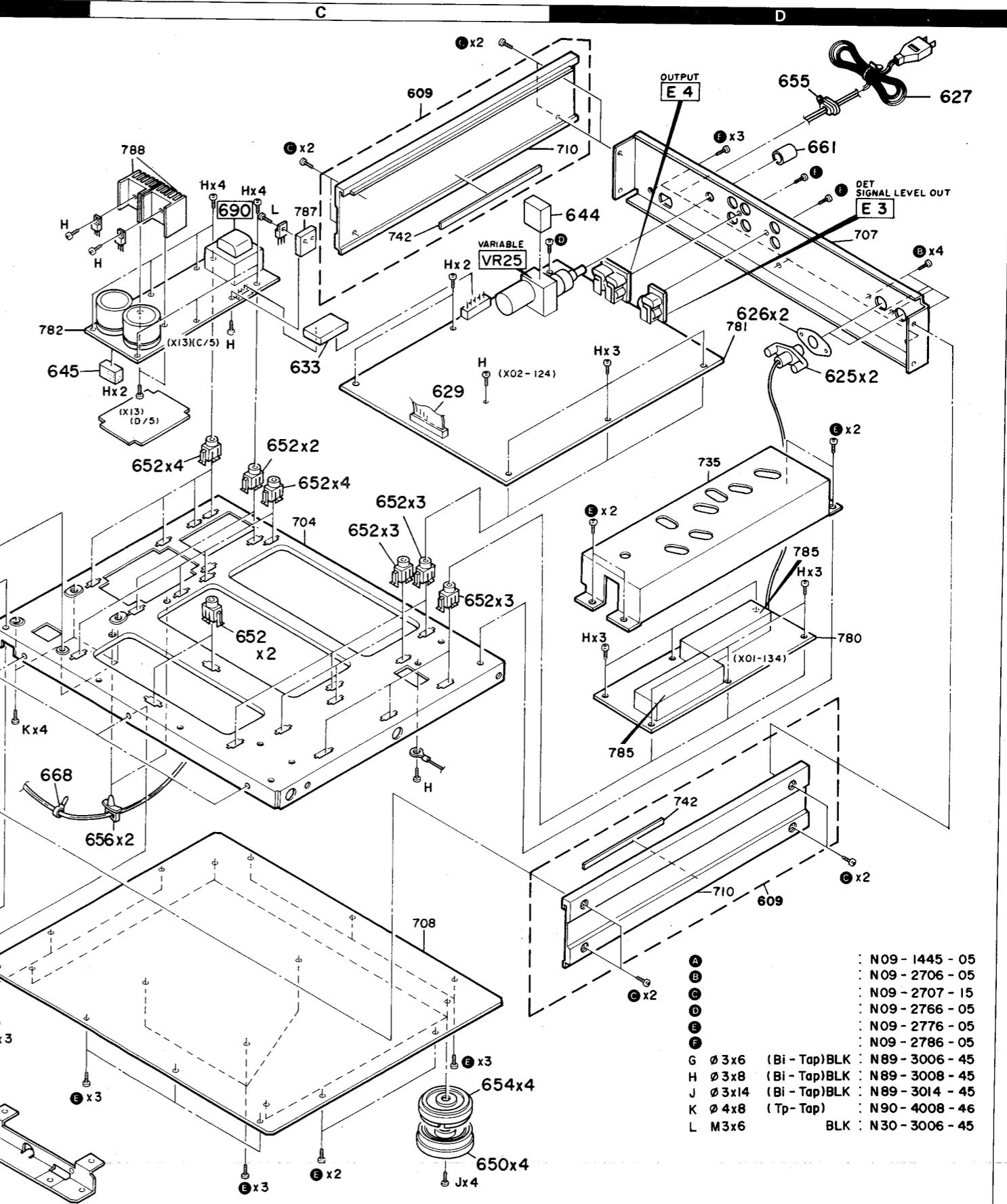
## KENWOOD

L-1000T L-1000T

## EXPLODED VIEW



## EXPLODED VIEW



(Bi - Tap)BLK	: N09 - 1445 - 05
(Bi - Tap)BLK	: N09 - 2706 - 05
(Bi - Tap)BLK	: N09 - 2707 - 15
(Bi - Tap)BLK	: N09 - 2766 - 05
(Bi - Tap)BLK	: N09 - 2776 - 05
(Bi - Tap)BLK	: N09 - 2786 - 05
(Tp - Tap)BLK	: N89 - 3006 - 45
(Bi - Tap)BLK	: N89 - 3008 - 45
(Bi - Tap)BLK	: N89 - 3014 - 45
(Tp - Tap)BLK	: N90 - 4008 - 46
BLK	: N30 - 3006 - 45

L-1000T

L-1000T

## PARTS LIST

\* New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位 置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti- nation 仕 向	Re- marks 備考
<b>L-1000T</b>						
601	1B		A09-0100-08	BATTERY COVER		
602	3A	*	A20-6016-05	PANEL		
603	1B	*	A70-0350-05	REMOTE CONTROLLER ASSY		
603	1B	*	A70-0357-05	REMOTE CONTROLLER ASSY		
609	1C, 3D	*	A50-0336-03	SIDE PLATE ASSY	KXT	
611	1A	*	A52-0141-12	TOP PLATE ASSY		
617	2A		B07-1921-03	ESCUOTCHEON (POWER)		
618	3A		B07-1928-04	ESCUOTCHEON (MODE)		
619	3A	*	B10-1080-04	FRONT GLASS		
620	3A		B19-1502-04	LIGHTING BOARD		
621	3B		B12-0133-04	INDICATOR		
-			B46-0092-03	WARRANTY CARD	K	
-			B46-0096-13	WARRANTY CARD	X	
-			B46-0122-13	WARRANTY CARD	EL	
-			B46-0143-13	WARRANTY CARD	T	
-			B58-0803-13	CAUTION CARD	E	
-		*	B60-0082-00	INSTRUCTION MANUAL(ENGLISH)	EL	
-		*	B60-0083-00	INSTRUCTION MANUAL(FRENCH)	EL	
-		*	B60-0084-00	INSTRUCTION MANUAL(G, D, I)	EL	
625	1D		E04-0006-05	RF COAXIAL CABLE RECEPTACLE		
626	1D		E29-0130-04	LEAD PLATE		
△ 627	1D		E30-0459-05	AC POWER CORD	L	
△ 627	1D		E30-0974-05	AC POWER CORD	K	
△ 627	1D		E30-1341-05	AC POWER CORD	X	
△ 627	1D		E30-1416-05	AC POWER CORD	T	
△ 627	1D		E30-2580-05	AC POWER CORD	E	
628	1B		E30-2600-05	CORD WITH PLUG		
629	1C	*	E31-7488-05	WIRING HARNESS		
633	1C		E40-4278-05	SOCKET FOR PIN ASSY		
636	3B	*	F39-0051-04	REINFORCING BAR		
643	3B	*	G13-0257-04	CUSHION		
644	1D	*	G13-0258-04	CUSHION		
645	1B	*	G13-0260-04	CUSHION		
-		*	H01-8761-04	ITEM CARTON CASE		
-			H10-3930-02	POLYSTYRENE FOAMED FIXTURE		
-			H10-3931-12	POLYSTYRENE FOAMED FIXTURE		
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
-			H25-0391-04	PROTECTION BAG		
-		*	H25-0396-14	PROTECTION BAG		
650	3C		J02-1054-05	FOOT		
651	3B		J19-0506-05	UNIT HOLDER		
652	2C		J19-3242-05	HOLDER		
△ 654	3C		J39-0154-04	SPACER		
△ 655	1D		J41-0024-15	POWER CORD BUSHING	E	
△ 655	1D		J42-0083-05	POWER CORD BUSHING	KXTL	
656	3C		J61-0039-05	WIRE BAND		
-			J61-0307-05	WIRE BAND		
660	3A		K21-0418-04	KNOB (TUNING)		
661	1D		K29-3824-04	KNOB (LEVEL)		
662	3A		K29-3831-04	KNOB (POWER)		

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L-1000T

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<b>L-1000T</b>						
663	3A		K29-3832-04	KNOB (MODE)		
△ 667	2B	*	L07-0065-05	POWER TRANSFORMER	EL	
△ 667	2B	*	L07-0066-05	POWER TRANSFORMER	XT	
△ 667	2B	*	L07-0067-05	POWER TRANSFORMER	K	
668	2B		L92-0025-05	FERRITE CORE		
A	3A		N09-1445-05	SET SCREW (M3X8)		
B	1A, 1D		N09-2706-05	TAPITTE SCREW		
C	1C, 3D		N09-2707-15	DRESSED SCREW		
D	1D	*	N09-2766-05	MACHINE SCREW (3X8)		
E	1D, 3C		N09-2776-05	SEMS (TAPITTE SCREW)		
F	3A	*	N09-2786-05	SEMS (TAPITTE SCREW)		
G	3A		N89-3006-45	BINDING HEAD TAPITTE SCREW		
H	1C, 2D		N89-3008-45	BINDING HEAD TAPITTE SCREW		
J	3C		N89-3014-45	BINDING HEAD TAPITTE SCREW		
K	2B		N90-4008-46	TP HEAD MACHINE SCREW		
673	1B		T90-0132-05	T TYPE ANTENNA		
674	1B		T90-0136-05	ANTENNA ADAPTOR		
675	3A	*	T99-0504-05	SPEED DETECTOR		
<b>FRONT END UNIT (X01-134X-XX; 0-11: K, 2-70: E, X, L, T)</b>						
C1			CC45FSL1H330J	CERAMIC	33PF	J
C2			CF92FV1H102J	MF	1000PF	J
C3			CC45FPH1H330J	CERAMIC	33PF	J
C5		*	CC45FCH1H010C	CERAMIC	1.0PF	C
C6		*	CC45FCH1H020C	CERAMIC	2.0PF	C
C7			CC45FCH1H050C	CERAMIC	5.0PF	C
C8			C91-0757-05	CERAMIC	1000PF	K
C9	, 10		CK45FF1H472Z	CERAMIC	4700PF	Z
C11			CC45FPH1H330J	CERAMIC	33PF	J
C13		*	C91-1426-05	CERAMIC	0.8PF	C
C14	, 15	*	CC45FCH1H020C	CERAMIC	2.0PF	C
C16			CC45FSL1H100D	CERAMIC	10PF	D
C17			CC45FPH1H330J	CERAMIC	33PF	J
C19			CC45FPH1H330J	CERAMIC	33PF	J
C21			CE04KW1V100M	ELECTRO	10UF	35WV
C22			CE04KW1V330M	ELECTRO	33UF	35WV
C23			CF92FV1H103J	MF	0.010UF	J
C24			CF92FV1H101K	MF	100PF	K
C25			CE04KW1V330M	ELECTRO	33UF	35WV
C26			CF92FV1H101K	MF	100PF	K
C27	, 28		CE04KW1E101M	ELECTRO	100UF	25WV
C29			CF92FV1H101K	MF	100PF	K
C30			CE04KW1V330M	ELECTRO	33UF	35WV
C31			CF92FV1H101K	MF	100PF	K
C32	, 33		CE04KW1E101M	ELECTRO	100UF	25WV
C35			CC45FCH1H330J	CERAMIC	33PF	J
C36			CC45FSL1H470J	CERAMIC	47PF	J
C37	, 38	*	CK45FF1H472Z	CERAMIC	4700PF	Z
C41			CC45FCH1H010C	CERAMIC	1.0PF	C
C43			CC45FCH1H330J	CERAMIC	33PF	J
C45	, 46		CC45FCH1H20J	CERAMIC	12PF	J
C47			CC45FCH1H270J	CERAMIC	27PF	J
C48			CK45FF1H472Z	CERAMIC	4700PF	Z
C49			CF92FV1H101K	MF	100PF	K
C50			CE04KW1H010M	ELECTRO	1.0UF	50WV

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C51 -53		*	CE04KW1V330M	ELECTRO	33UF	35WV		
C54			C91-0715-05	CERAMIC	3.3PF	K		
C56 ,57			CK45FF1H472Z	CERAMIC	4700PF	Z		
C58			CC45FSL1H470J	CERAMIC	47PF	J		
C59 ,60			CE04KW1V330M	ELECTRO	33UF	35WV		
C61 -65			CF92FV1H103J	MF	0.010UF	J		
C66			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C67			CF92FV1H102J	MF	1000PF	J		
C68 -70			CF92FV1H103J	MF	0.010UF	J		
C71			CE04KW1V330M	ELECTRO	33UF	35WV		
C72			CE04KW1V100M	ELECTRO	10UF	35WV		
C74 -76			CF92FV1H103J	MF	0.010UF	J		
C77			C91-0769-05	CERAMIC	0.01UF	K		
C78 -80			CF92FV1H103J	MF	0.010UF	J		
C81			C91-0769-05	CERAMIC	0.01UF	K		
C82			CE04KW1V330M	ELECTRO	33UF	35WV		
C85			CF92FV1H101K	MF	100PF	K		
C86 ,87			CF92FV1H103J	MF	0.010UF	J		
C88 ,89			CF92FV1H102J	MF	1000PF	J		
C90 ,91			CF92FV1H102J	MF	1000PF	J	EXTL	
C92 ,93			CF92FV1H103J	MF	0.010UF	J		
C94			CF92FV1H102J	MF	1000PF	J		
TC1 -6			C05-0302-05	CERAMIC TRIMMER CAPACITOR(11PF)				
E1		*	E13-0194-05	PHONO JACK (1P)(IF OUT)				
E2		*	E13-0195-05	PHONO JACK (1P)(OSC OUT)				
E3 ,4		*	E13-0194-05	PHONO JACK (1P)(ANT A,B)				
L1			L31-0545-05	FM-RF COIL				
L2			L31-0546-05	FM-RF COIL				
L3 ,4			L31-0545-05	FM-RF COIL				
L5 ,6		*	L32-0400-05	FM OSCILLATING COIL				
L7 ,8		*	L19-0070-05	BALUN TRANSFORMER				
L9 ,10			L30-0381-05	FM IFT				
L11		*	L19-0070-05	BALUN TRANSFORMER				
L12		*	L30-0486-05	FM IFT				
L13 -15			L40-1091-17	SMALL FIXED INDUCTOR(1UH)				K
L15			L40-1091-17	SMALL FIXED INDUCTOR(1UH)				EXTL
L17			L92-0017-05	FERRITE CORE				
L18			L40-1091-17	SMALL FIXED INDUCTOR(1UH)				
L19		*	L92-0027-05	FERRITE CORE				
L20			L40-1091-17	SMALL FIXED INDUCTOR(1UH)				
L21 ,22			L40-1091-16	SMALL FIXED INDUCTOR(1UH)				
L23 ,24			L40-1011-17	SMALL FIXED INDUCTOR(100UH,K)				
L25			L92-0017-05	FERRITE CORE				
L27 ,28		*	L92-0027-05	FERRITE CORE				
L29			L40-1091-17	SMALL FIXED INDUCTOR(1UH)				
L30 ,31			L40-2291-16	SMALL FIXED INDUCTOR(2.2UH)				
L32			L40-1091-17	SMALL FIXED INDUCTOR(1UH)				
L33 -35			L92-0017-05	FERRITE CORE				
L36 ,37		*	L92-0027-05	FERRITE CORE				
L39 ,40		*	L92-0027-05	FERRITE CORE				
L41			L40-1091-17	SMALL FIXED INDUCTOR(1UH)				
L42 -44			L40-2291-17	SMALL FIXED INDUCTOR(2.2UH)				
L45 ,46		*	L92-0027-05	FERRITE CORE				
L47 -55		*	L40-1091-17	SMALL FIXED INDUCTOR(1UH)				

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R27			RD14GB2E391J	FL-PROOF RD 390	J 1/4W	
R59			RD14GB2E560J	FL-PROOF RD 56	J 1/4W	
K1		*	S51-1058-05	MAGNETIC RELAY		
D1 -6			KV1320-6	VARIABLE CAPACITANCE DIODE		
D9 ,10			ISS85	DIODE		
D11			HSS104	DIODE		
D11			ISS133	DIODE		
D12		*	1SV157	DIODE		
D13			ISS85	DIODE		
D14			HZS11N(B2)	ZENER DIODE		
D14			RD11ES(B2)	ZENER DIODE		
D15 ,16			HZS8.2S(B2)	ZENER DIODE		
D15 ,16			RD8.2JS(B2)	ZENER DIODE		
D17			HZS5.1S(B2)	ZENER DIODE		
D17			RD5.1JS(B2)	ZENER DIODE		
D18			HZS13N(B2)	ZENER DIODE		
D18			RD13ES(B2)	ZENER DIODE		
D19			HSS104	DIODE		
D19			ISS133	DIODE		
D20			HZS8.2S(B2)	ZENER DIODE		
D20			RD8.2JS(B2)	ZENER DIODE		
D21			HZS5.1S(B2)	ZENER DIODE		
D21			RD5.1JS(B2)	ZENER DIODE		
D22			HZS13N(B2)	ZENER DIODE		
D22			RD13ES(B2)	ZENER DIODE		
D23			HSS104	DIODE		
D23			ISS133	DIODE		
D24 ,25		*	1SV157	DIODE		
D26			HZS8.2S(B2)	ZENER DIODE		
D26			RD8.2JS(B2)	ZENER DIODE		
D27 ,28			E-202	CONSTANT CURRENT DIODE		
IC1 -3			NJM4565D	IC(OP AMP X2)		
IC4		*	LA1177	IC(MIC/IF/OSC)		
Q1			2SA954(L, K)	TRANSISTOR		
Q2			2SK105(H)	FET		
Q3			2SD1266(Q, P)	TRANSISTOR		
Q4			2SB941(Q, P)	TRANSISTOR		
Q5 ,6			2SK105(H)	FET		
Q7			2SD1266(Q, P)	TRANSISTOR		
Q8			2SB941(Q, P)	TRANSISTOR		
Q9			2SK105(H)	FET		
Q10			3SK122(L)	FET		
Q11 ,12			2SK241(GR)	FET		
Q13			2SK152(3, 4)	FET		
Q14			2SC1845(F, E)	TRANSISTOR		
Q15			2SA992(F, E)	TRANSISTOR		
Q16			2SC1845(F, E)	TRANSISTOR		
Q17			2SK241(GR)	FET		
Q18 ,19			2SK125T	DUAL FET		
Q20 ,21			2SA992(F, E)	TRANSISTOR		
IF UNIT (X02-124X-XX; 0-11:K, 2-70: E, X, L, T)						
D33			LTZ-MR15	LED		
D35			LTZ-MR15	LED		

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D37			LTZ-MR15	LED				
D61			LTZ-MR15	LED				
D92			LTZ-MR15	LED				
C1 , 2			CF92FV1H103J	MF	0.010UF	J		
C3			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C4 -8			CF92FV1H103J	MF	0.010UF	J		
C9			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C10 , 11			CF92FV1H103J	MF	0.010UF	J		
C12			C91-0749-05	CERAMIC	220PF	K		
C13 -17			CF92FV1H103J	MF	0.010UF	J		
C18			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C19 -21			CF92FV1H103J	MF	0.010UF	J		
C22			C91-0749-05	CERAMIC	220PF	K		
C23 -27			CF92FV1H103J	MF	0.010UF	J		
C28			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C29 , 30			CF92FV1H103J	MF	0.010UF	J		
C31			C91-0749-05	CERAMIC	220PF	K		
C32 -36			CF92FV1H103J	MF	0.010UF	J		
C37			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C38 -40			CF92FV1H103J	MF	0.010UF	J		
C41			C91-0749-05	CERAMIC	220PF	K		
C42 , 43			CF92FV1H103J	MF	0.010UF	J		
C45 -47			CF92FV1H103J	MF	0.010UF	J		
C48 , 49			CC45FTH1H330J	CERAMIC	33PF	J		
C50			CC45FSL1H220J	CERAMIC	22PF	J		
C51			CQ09FS1H101J	POLYSTY	100PF	J		
C52 , 53			CE04KW1A221M	ELECTRO	220UF	10WV		
C54			C90-1334-05	NP-ELEC	47UF	10WV		
C55			CQ09FS1H511J	POLYSTY	510PF	J		
C56			CE04KW1V100M	ELECTRO	10UF	35WV		
C57			C90-1334-05	NP-ELEC	47UF	10WV		
C58			C90-1349-05	NP-ELEC	1UF	50WV		
C59			CC45FSL1H151J	CERAMIC	150PF	J		
C60			CC45FSL1H680J	CERAMIC	68PF	J		
C61			C90-1349-05	NP-ELEC	1UF	50WV		
C62			CE04KW1H0R1M	ELECTRO	0.1UF	50WV		
C63			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C64			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C65			CE04KW1HR47M	ELECTRO	0.47UF	50WV		
C66			CC45FSL1H221J	CERAMIC	220PF	J		
C67 , 68			CF92FV1H103J	MF	0.010UF	J		
C69			CE04KW1A221M	ELECTRO	220UF	10WV		
C70			CF92FV1H103J	MF	0.010UF	J		
C71 , 72			CF92FV1H102J	MF	1000PF	J		
C73 , 74			CE04KW1C101M	ELECTRO	100UF	16WV		
C75 -79			CF92FV1H102J	MF	1000PF	J		
C80			C90-1332-05	NP-ELEC	10UF	25WV		
C81			CC45FSL1H020C	CERAMIC	2.0PF	C		
C82			C90-1333-05	NP-ELEC	22UF	10WV		
C83			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C84			CE04KW1A101M	ELECTRO	100UF	10WV		
C85			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C86			C90-1333-05	NP-ELEC	22UF	10WV		
C87 , 88			CE04KW1C101M	ELECTRO	100UF	16WV		

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C89			CF92FV1H104J	MF	0.10UF	J		
C90			CE04KW1A221M	ELECTRO	220UF	10WV		
C91			CE04KW1V101M	ELECTRO	100UF	35WV		
C92			CE04KW1V330M	ELECTRO	33UF	35WV		
C93			C90-1456-05	NP-ELEC	0.22UF	50WV		
C94			CF92FV1H103J	MF	0.010UF	J		
C95			CE04KW1V101M	ELECTRO	100UF	35WV		
C96			CC45FCH1H270J	CERAMIC	27PF	J		
C97			CC45FCH1H220J	CERAMIC	22PF	J		
C98 -100			C91-0749-05	CERAMIC	220PF	K		
C101			CF92FV1H103J	MF	0.010UF	J		
C102			CE04KW1V330M	ELECTRO	33UF	35WV		
C103			CF92FV1H102J	MF	1000PF	J		
C104			CF92FV1H103J	MF	0.010UF	J		
C105			C90-1332-05	NP-ELEC	10UF	25WV		
C106			CE04KW1C101M	ELECTRO	100UF	16WV		
C107			CF92FV1H102J	MF	1000PF	J		
C108			CE04KW1V330M	ELECTRO	33UF	35WV		
C109			CF92FV1H104J	MF	0.10UF	J		
C110			CF92FV1H103J	MF	0.010UF	J		
C111			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C112			CE04KW1A101M	ELECTRO	100UF	10WV		
C113-115			CE04KW1V100M	ELECTRO	10UF	35WV		
C116-118			CE04KW1V4R7M	ELECTRO	4.7UF	35WV		
C119			CE04KW1A221M	ELECTRO	220UF	10WV		
C120			CE04KW1A101M	ELECTRO	100UF	10WV		
C121			CF92FV1H682J	MF	6800PF	J		
C122			CE04KW1H0R1M	ELECTRO	0.1UF	50WV		
C123		*	CQ93HP2A391J	MYLAR	390PF	J		
C124			CF92FV1H224J	MF	0.22UF	J		
C125			CF92FV1H104J	MF	0.10UF	J		
C126			CE04KW1HR22M	ELECTRO	0.22UF	50WV		
C127			CE04KW1C470M	ELECTRO	47UF	16WV		
C128			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C129			CE04KW1V100M	ELECTRO	10UF	35WV		
C130			CE04KW1C101M	ELECTRO	100UF	16WV		
C131			CE04KW1V100M	ELECTRO	10UF	35WV		
C132			CF92FV1H223J	MF	0.022UF	J		
C133			CF92FV1H103J	MF	0.010UF	J		
C134			CF92FV1H103J	MF	0.010UF	J	K	
C135			CQ93HP2A183J	MYLAR	0.018UF	J		
C136			CE04KW1V100M	ELECTRO	10UF	35WV		
C137			CE04KW1A101M	ELECTRO	100UF	10WV		
C138			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C139			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C140			CF92FV1H104J	MF	0.10UF	J		
C141			CF92FV1H102J	MF	1000PF	J		
C142, 143			CF92FV1H222J	MF	2200PF	J		
C144			CF92FV1H104J	MF	0.10UF	J		
C145			C90-1331-05	NP-ELEC	0.47UF	50WV		
C146			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C147			CE04KW1V100M	ELECTRO	10UF	35WV		
C148			CQ93HP2A472J	MYLAR	4700PF	J		
C149			CF92FV1H103J	MF	0.010UF	J		
C150, 151			CF92FV1H104J	MF	0.10UF	J	K	

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C152			CE04KW1A221M	ELECTRO	220UF	10WV		
C153			CF92FV1H223J	MF	0.022UF	J		
C154			CF92FV1H104J	MF	0.10UF	J		
C155			CQ09FS1H511J	POLYSTY	510PF	J		
C156			CF92FV1H103J	MF	0.010UF	J		
C157			CE04KW1V101M	ELECTRO	100UF	35WV		
C158			CQ09FS1H102J	POLYSTY	1000PF	J		
C159			CQ09FS1H511J	POLYSTY	510PF	J		
C160			CQ93HP2A472J	MYLAR	4700PF	J		
C161			CF92FV1H103J	MF	0.010UF	J		
C162			CQ93HP2A122J	MYLAR	1200PF	J		
C163			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C164			CE04KW1V100M	ELECTRO	10UF	35WV		
C165			CF92FV1H104J	MF	0.10UF	J		
C166			CE04KW1V330M	ELECTRO	33UF	35WV		
C167			CF92FV1H104J	MF	0.10UF	J		
C168			CE04KW1V101M	ELECTRO	100UF	35WV		
C169			C90-1333-05	NP-ELEC	22UF	10WV		
C170		*	CQ09FS1H112J	POLYSTY	1100PF	J		
C171-173			CF92FV1H123J	MF	0.012UF	J		
C174			CC45FSL1H220J	CERAMIC	22PF	J		
C175			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C176			CE04KW1C470M	ELECTRO	47UF	16WV		
C177			CE04KW1A101M	ELECTRO	100UF	10WV		
C178			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C179			CE04KW1C470M	ELECTRO	47UF	16WV		
C180			CC45FSL1H100D	CERAMIC	10PF	D		
C181			C90-1334-05	NP-ELEC	47UF	10WV		
C182		*	CQ93HP2A123J	MYLAR	0.012UF	J	K	EXTL
C182		*	CQ93HP2A822J	MYLAR	8200PF	J		
C183, 184			C90-1334-05	NP-ELEC	47UF	10WV		
C185			CE04KW1V101M	ELECTRO	100UF	35WV		
C186			C90-1333-05	NP-ELEC	22UF	10WV		
C187, 188			C90-1334-05	NP-ELEC	47UF	10WV		
C189			CQ93HP2A123J	MYLAR	0.012UF	J	K	
C189			CQ93HP2A822J	MYLAR	8200PF	J		EXTL
C190			C90-1334-05	NP-ELEC	47UF	10WV		
C191			CC45FSL1H100D	CERAMIC	10PF	D		
C192, 193			CC45FSL1H101J	CERAMIC	100PF	J		
C194			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C195			CC45FSL1H101J	CERAMIC	100PF	J		
C196			CK45FF1H103Z	CERAMIC	0.010UF	Z		
C197-199			CC45FSL1H101J	CERAMIC	100PF	J		
C200			CE04KW1V100M	ELECTRO	10UF	35WV		
C201			CF92FV1H103J	MF	0.010UF	J		
C202			CF92FV1H222J	MF	2200PF	J		
C203, 204			CE04KW1C470M	ELECTRO	47UF	16WV		
C205			CE04KW1V330M	ELECTRO	33UF	35WV		
CN2			E10-2604-05	FLAT CABLE CONNECTOR				
E1		*	E13-0194-05	PHONO JACK	(1P)(IF IN)			
E2		*	E13-0195-05	PHONO JACK	(1P)(OSC IN)			
E3		*	E13-2207-05	PHONO JACK	(2P)(DET OUT)			
E4	1D		E13-1401-05	PHONO JACK	(4P)(OUTPUT)			
CF1 , 2			L72-0546-05	CERAMIC FILTER				

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CF3 , 4		*	L72-0116-05	CERAMIC FILTER	K	
CF3 , 4		*	L72-0565-05	CERAMIC FILTER	EXTL	
CF5		*	L72-0566-05	CERAMIC FILTER	EXTL	
CF5 , 6		*	L72-0566-05	CERAMIC FILTER	K	
CF6			L72-0567-05	CERAMIC FILTER	EXTL	
CF7		*	L72-0566-05	CERAMIC FILTER	EXTL	
CF8		*	L72-0567-05	CERAMIC FILTER	EXTL	
L1 -4			L40-1092-17	SMALL FIXED INDUCTOR(1UH, M)		
L5			L30-0416-05	FM IFT		
L6			L40-1001-17	SMALL FIXED INDUCTOR(10UH, K)		
L7			L32-0294-05	FM OSCILLATING COIL		
L8 -10			L40-1001-17	SMALL FIXED INDUCTOR(10UH, K)		
L11			L40-6825-29	SMALL FIXED INDUCTOR(6.8mH, J)		
L12		*	L40-3925-29	SMALL FIXED INDUCTOR(3.9mH, J)		
L13			L40-1001-17	SMALL FIXED INDUCTOR(10UH, K)		
L14			L40-1001-17	SMALL FIXED INDUCTOR(10UH, K)		
L15 -18			L40-1001-17	SMALL FIXED INDUCTOR(10UH, K)		
L19 -22			L92-0017-05	FERRITE CORE		
L23 , 24			L40-1001-17	SMALL FIXED INDUCTOR(10UH, K)		
L25 , 26		*	L35-0065-05	SMALL FIXED INDUCTOR(3.9mH, J)		
L27 , 28			L35-0059-05	MPX COIL		
L29 , 30		*	L79-0793-05	LC FILTER		
L31 -33			L40-4701-17	SMALL FIXED INDUCTOR(47UH, K)		
L34 , 35			L40-1001-17	SMALL FIXED INDUCTOR(10UH, K)		
L36 -38			L92-0017-05	FERRITE CORE		
L40			L40-1001-17	SMALL FIXED INDUCTOR(10UH, K)		
L41			L40-4701-17	SMALL FIXED INDUCTOR(47UH, K)		
L42 , 43			L40-1092-17	SMALL FIXED INDUCTOR(1UH, M)		
X1			L77-1122-05	CRYSTAL RESONATOR(7.2MHz)		
X2		*	L77-1180-05	CRYSTAL RESONATOR(38kHz)		
R131, 132			RD14GB2E470J	FL-PROOF RD 47 J 1/4W		
R328			RN14BK2C1472F	RN 14.7K F 1/6W		
R349			RD14GB2E181J	FL-PROOF RD 180 J 1/4W		
R365			RN14BK2C6191F	RN 6.19K F 1/6W		
R366		*	RN14BK2C2152F	RN 21.5K F 1/6W		
R372			RN14BK2C4641F	RN 4.64K F 1/6W		
R373			RN14BK2C1102F	RN 11.0K F 1/6W		
R386		*	RN14BK2C4642F	RN 46.4K F 1/6W		
R394		*	RN14BK2C1472F	RN 14.7K F 1/6W		
R395		*	RN14BK2C2152F	RN 21.5K F 1/6W		
R406			RN14BK2C1472F	RN 14.7K F 1/6W		
R410-413		*	R92-1737-05	CARBON FILM RESISTOR 4.7M		
R458			RD14GB2E470J	FL-PROOF RD 47 J 1/4W		
R528			RS14KB3A220J	FL-PROOF RS 2.2 J 1W		
VR2			R12-3128-05	TRIM POT. 22K		
VR3			R12-6018-05	TRIM POT. 470K		
VR4			R12-3132-05	TRIM POT. 47K		
VR5 , 6			R12-5058-05	TRIM POT. 100K		
VR7 , 8			R12-0108-05	TRIM POT. 470		
VR9 -15			R12-3126-05	TRIM POT. 10K		
VR16			R12-1085-05	TRIM POT. 2.2K		
VR17			R12-5060-05	TRIM POT. 220K		
VR18			R12-3126-05	TRIM POT. 10K		
VR19, 20			R12-1087-05	TRIM POT. 3.3K		
VR21, 22			R12-5060-05	TRIM POT. 220K		

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VR23			R12-3128-05	TRIM POT. 22K		
VR24			R12-1085-05	TRIM POT. 2.2K		
VR25	1C	*	R29-3031-05	POTENTIOMETER(10K)(VARIABLE)		
K1 , 2			S51-2089-05	MAGNETIC RELAY		
D1 -20			HSS104	DIODE		
D1 -20			1SS133	DIODE		
D21 -23			HZS8.2S(B2)	ZENER DIODE		
D21 -23			RD8.2JS(B2)	ZENER DIODE		
D24 , 25			HSS104	DIODE		
D24 , 25			1SS133	DIODE		
D26			SD103A	DIODE		
D27			HSS104	DIODE		
D27			1SS133	DIODE		
D28 -31			HZS5.1S(B2)	ZENER DIODE		
D28 -31			RD5.1JS(B2)	ZENER DIODE		
D32			HSS104	DIODE		
D32			1SS133	DIODE		
D34			HZS8.2S(B2)	ZENER DIODE		
D34			RD8.2JS(B2)	ZENER DIODE		
D36			B-352	CONSTANT CURRENT DIODE		
D38			SD103A	DIODE		
D39 -41			HSS104	DIODE		
D39 -41			1SS133	DIODE		
D42 , 43			HSS104	DIODE	EXTL	
D42 , 43			1SS133	DIODE	EXTL	
D44 -50			HSS104	DIODE		
D44 -50			1SS133	DIODE		
D51			HZS5.1S(B2)	ZENER DIODE		
D51			RD5.1JS(B2)	ZENER DIODE		
D52			SD103A	DIODE		
D53 , 54			HSS104	DIODE		
D53 , 54			1SS133	DIODE		
D55 , 56			HZS5.1S(B2)	ZENER DIODE		
D55 , 56			RD5.1JS(B2)	ZENER DIODE		
D57			SD103A	DIODE		
D58			HSS104	DIODE		
D58			1SS133	DIODE		
D59			HZS5.1S(B2)	ZENER DIODE		
D59			RD5.1JS(B2)	ZENER DIODE		
D60			HSS104	DIODE		
D60			1SS133	DIODE		
D62			HSS104	DIODE		
D62			1SS133	DIODE		
D63 , 64		*	1T33C	VARIABLE CAPACITANCE DIODE		
D65			HSS104	DIODE		
D65			1SS133	DIODE		
D66 -68			SD103A	DIODE		
D69			HZS5.1S(B2)	ZENER DIODE		
D69			RD5.1JS(B2)	ZENER DIODE		
D70			HSS104	DIODE		
D70			1SS133	DIODE		
D71			HZS5.1S(B2)	ZENER DIODE		
D71			RD5.1JS(B2)	ZENER DIODE		
D72 -74			HSS104	DIODE		

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D72 -74			1SS133	DIODE		
D75			HZS5.1S(B2)	ZENER DIODE		
D75			RD5.1JS(B2)	ZENER DIODE		
D76 -81			HSS104	DIODE		
D76 -81			1SS133	DIODE		
D82			HZS5.1S(B2)	ZENER DIODE		
D82			RD5.1JS(B2)	ZENER DIODE		
D83 -85			HSS104	DIODE		
D83 -85			1SS133	DIODE		
D86			SD103A	DIODE		
D87			E-272	CONSTANT CURRENT DIODE		
D88			E-452	CONSTANT CURRENT DIODE		
D89			SD103A	DIODE		
D90			KV1226(X)	VARIABLE CAPACITANCE DIODE		
D91			HSS104	DIODE		
IC1 -3			1SS133	DIODE		
IC4 -13			NJM4200D	IC(OP AMP X2)		
IC14-16			NJM4565D	IC(OP AMP X2)		
IC17,18			NJM4565D-D	IC(OP AMP X2)		
IC19,20			NJM4565D-D	IC(OP AMP X2)		
IC21	*		MC1594L	IC(4-QUADRANT MULTIPLIER)		
IC22			NJM4565D-D	IC(OP AMP X2)		
IC23			NJM4565D	IC(OP AMP X2)		
IC24-27			NJM4565D-D	IC(OP AMP X2)		
IC28			NJM4565D	IC(OP AMP X2)		
IC29,30			NJM4565D-D	IC(OP AMP X2)		
IC31			NJM4565D	IC(OP AMP X2)		
IC32			TC74HCU04AP	IC(CMOS INVERTER)		
IC33			MC4044P	IC(PHASE-FREQ DETECTOR)		
IC34			NJM4565D	IC(OP AMP X2)		
IC35			AN7465K	IC(38kHz DETECTOR)		
IC36-43			NJM4565D	IC(OP AMP X2)		
IC44			M5238P	IC(OP AMP)		
IC45			LM7001	IC(PLL FREQUENCY SYNTHESIZER)		
IC46	*		M5207L05	IC(ELECTRIC VR)		
Q1 -22			2SC1923(R,Q)	TRANSISTOR		
Q23 ,24			2SK161(GR)	FET		
Q25			2SA733(A)(Q,P)	TRANSISTOR		
Q25			2SA933S(Q,R)	TRANSISTOR		
Q26			2SK163(M)	FET		
Q27			2SC1740S(Q,R)	TRANSISTOR		
Q27			2SC945(A)(Q,P)	TRANSISTOR		
Q28 ,29			2SK364(GR,BL)	FET		
Q30			2SC1923(R,Q)	TRANSISTOR		
Q31 -33			2SK246(Y,GR)	FET		
Q34			2SK364(GR,BL)	FET		
Q35			2SK364(GR,BL)	FET		
Q36 ,37			2SK246(Y,GR)	FET		
Q38 ,39			2SK1132	FET		
Q40			2SD863(E,F)	TRANSISTOR		
Q41			2SC1740S(Q,R)	TRANSISTOR		
Q41			2SC945(A)(Q,P)	TRANSISTOR		
Q42			2SC2003(L,K)	TRANSISTOR		
Q43			2SK246(Y,GR)	FET		

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Q44			2SA733(A)(Q,P)	TRANSISTOR		
Q44			2SA933S(Q,R)	TRANSISTOR		
Q45			2SK246(Y,GR)	FET		
Q46			2SK364(GR,BL)	FET		
Q47			2SK246(Y,GR)	FET		
Q48 -50			2SK364(GR,BL)	FET		
Q51 ,52			2SK246(Y,GR)	FET		
Q53 ,54			2SK364(GR,BL)	FET		
Q55			2SC1740S(Q,R)	TRANSISTOR		
Q55			2SC945(A)(Q,P)	TRANSISTOR		
Q56			2SA954(L,K)	TRANSISTOR		
Q57			2SC1740S(Q,R)	TRANSISTOR		
Q57			2SC945(A)(Q,P)	TRANSISTOR		
Q58			2SD863(E,F)	TRANSISTOR		
Q59			2SB764(E,F)	TRANSISTOR		
Q60			2SK364(GR,BL)	FET		
Q60 ,61			2SK364(GR,BL)	FET	K	EXTL
Q62			2SC2003(L,K)	TRANSISTOR		
Q63			2SC1740S(Q,R)	TRANSISTOR		
Q63			2SC945(A)(Q,P)	TRANSISTOR		

## SUB-CIRCUIT UNIT (X13-645X-XX; 0-11: K, 2-70: E, X, L, T)

D1 -4		B30-1283-05	LED			
D10 ,11		B30-1283-05	LED			
C1 -3		CF92FV1H103J	MF	0.010UF	J	
C4		CE04JW1V100M	ELECTRO	10UF	35WV	
C8		CE04JW1H010M	ELECTRO	1.0UF	50WV	
C11		C90-1827-05	BACKUP	0.047F	5.5WV	
C13		CE04JW1HR47M	ELECTRO	0.47UF	50WV	
C21 -24		CF92FV1H103J	MF	0.010UF	J	
C27 -32		CF92FV1H103J	MF	0.010UF	J	
C36 -39		CF92FV1H103J	MF	0.010UF	J	
C40		CE04KW1E222M	ELECTRO	2200UF	25WV	
C41		CE04KW1V220M	ELECTRO	22UF	35WV	
C42	*	CE04DW1E331M	ELECTRO	330UF	25WV	
C43		CE04KW1H331M	ELECTRO	330UF	50WV	
C44		CF92FV1H103J	MF	0.010UF	J	
C45		CE04KW1V100M	ELECTRO	10UF	35WV	
C46 ,47	*	C90-1821-15	ALMINIUM ELECTROLYTIC	C.6800UF		
C48		CE04KW1V330M	ELECTRO	33UF	35WV	
C49		CF92FV1H121K	MF	120PF	K	
C50		CE04KW1E101M	ELECTRO	100UF	25WV	
C51		CE04KW1V220M	ELECTRO	22UF	35WV	
C52		CE04KW1H010M	ELECTRO	1.0UF	50WV	
C53		CE04KW1V100M	ELECTRO	10UF	35WV	
C54		CE04KW1E101M	ELECTRO	100UF	25WV	
C55		CF92FV1H121K	MF	120PF	K	
C56		CE04KW1C102M	ELECTRO	1000UF	16WV	
C57		CE04KW1C331M	ELECTRO	330UF	16WV	
C59	*	CE04DW1E331M	ELECTRO	330UF	25WV	
C60		CE04KW1H331M	ELECTRO	330UF	50WV	
△ C61 ,62		C91-0647-05	CERAMIC	0.01UF	P	
C63		CF92FV1H103J	MF	0.010UF	J	
C64		CE04KW1H331M	ELECTRO	330UF	50WV	
C65		CE04KW1H471M	ELECTRO	470UF	50WV	

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C66 ,67			CE04KW1V100M	ELECTRO 10UF 35WV		
C68			CF92FV1H103J	MF 0.010UF J		
C69 ,70			CE04JW1V100M	ELECTRO 10UF 35WV		
C71			CE04KW1E221M	ELECTRO 220UF 25WV		
C72			CE04JW1V100M	ELECTRO 10UF 35WV		
C73			C91-0769-05	CERAMIC 0.01UF K		
C74			CK45FF1H103Z	CERAMIC 0.010UF Z	EXTL	
CN9			E10-2604-05	FLAT CABLE CONNECTOR		
△ 690	1C		L01-5471-05	POWER TRANSFORMER	K	
△ 690	1C		L01-5472-05	POWER TRANSFORMER	EXTL	
L1 -3			L40-1011-17	SMALL FIXED INDUCTOR(100UH,K)		
X1			L78-0244-05	RESONATOR(4.19MHz)		
H	1C		N89-3008-45	BINDING HEAD TAPTITE SCREW		
L	1C	*	N30-3006-45	PAN HEAD MACHINE SCREW		
CP1			R90-0292-05	MULTI-COMP 100KX3 J 1/6W		
CP2			R90-0463-05	MULTIPLE RESISTOR 100KX9		
CP4		*	R90-0859-05	MULTIPLE RESISTOR 100KX16		
CP5			R90-0829-05	COMPOSITE ELEMENTS 220KX7		
CP6			R90-0203-05	MULTI-COMP 100KX5 J 1/6W		
CP8			R90-0482-05	MULTI-COMP 100KX4 J 1/6W		
R74			RN14BK2C1002F	RN 10.0K F 1/6W		
R75			RN14BK2C5621F	RN 5.62K F 1/6W		
R78			RN14BK2C1002F	RN 10.0K F 1/6W		
R79			RN14BK2C1102F	RN 11.0K F 1/6W		
R80 ,81			RN14BK2C1002F	RN 10.0K F 1/6W		
R99			R92-0173-05	RC 2.2M M 1/2W		
R100-103			RS14KB3D121J	FL-PROOF RS 120 J 2W		
△ K1			S51-1052-05	MAGNETIC RELAY		
S1 ,2	3A, 3B		S40-1064-05	PUSH SWITCH(POWER, MODE)		
D5			HZS13N(B2)	ZENER DIODE		
D5			RD13ES(B2)	ZENER DIODE		
D6 -9			HSS104	DIODE		
D6 -9			ISS133	DIODE		
D12			HZS5.1S(B2)	ZENER DIODE		
D12			RD5.1JS(B2)	ZENER DIODE		
D21 -24			S5566B	DIODE		
D25 ,26			HSS104	DIODE		
D25 ,26			ISS133	DIODE		
D27 -32			S5566B	DIODE		
D34			HZS5.1S(B2)	ZENER DIODE		
D34			RD5.1JS(B2)	ZENER DIODE		
D36 -39			S5566B	DIODE		
D41			HSS104	DIODE		
D41			ISS133	DIODE	K	
D42			HZS3.9N(B2)	ZENER DIODE		
D42			RD3.9ES(B2)	ZENER DIODE		
D43			S5566B	DIODE		
D44			HZS30N(B)	ZENER DIODE		
D44			RD30ES(B)	ZENER DIODE		
D45 -51			HZS13N(B2)	ZENER DIODE		
D45 -51			RD13ES(B2)	ZENER DIODE		
D52 -54			HSS104	DIODE		

E: Europe

K: USA

P: Canada

Y: PX(Far East, Hawaii)

T: England

M: Other Areas

Y: AAFES(Europe)

X: Australia

L: Scandinavia

⚠ indicates safety critical components.

## PARTS LIST

\* New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位 置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti- nation 仕向	Re- marks 備考
D52 -54			1SS133	DIODE		
D55			E-102	CONSTANT CURRENT DIODE		
D56			HSS104	DIODE		
D56			1SS133	DIODE		
D67			HSS104	DIODE		
D67			1SS133	DIODE		
FL1	3A	*	PIP8AMW8	FLUORESCENT INDICATOR TUBE		
IC1 ,2			NJM2901N	IC(QUAD COMPARATOR)		
IC3 ,4			LC7570	IC(FIP STATIC DRIVER)		
IC5			UPC78L05J	IC(VOLTAGE REGULATOR/ +5V)		
IC7			PST529D	IC(RESET)		
IC8			CXD1067P	IC(SERIAL-PARALLEL CONVERTER)		
IC11			UPC7805HF	IC(VOLTAGE REGULATOR/ +5V)		
IC12		*	M5223P	IC(OP AMP X2)		
IC14		*	M50941-339SP	IC(MICROPROCESSOR)		
Q1			2SA733(A)(Q,P)	TRANSISTOR		
Q1			2SA933S(Q,R)	TRANSISTOR		
Q2 -4			2SC1740S(Q,R)	TRANSISTOR		
Q2 -4			2SC945(A)(Q,P)	TRANSISTOR		
Q5			2SB941(Q,P)	TRANSISTOR		
Q6			2SD1266(Q,P)	TRANSISTOR		
Q7			2SD863(E,F)	TRANSISTOR		
Q8			2SC1740S(Q,R)	TRANSISTOR		
Q8			2SC945(A)(Q,P)	TRANSISTOR		
Q9			2SB764(E,F)	TRANSISTOR		
Q10			2SA733(A)(Q,P)	TRANSISTOR		
Q10			2SA933S(Q,R)	TRANSISTOR		
Q11			2SC1740S(Q,R)	TRANSISTOR		
Q11			2SC945(A)(Q,P)	TRANSISTOR		
Q12			2SC2003(L,K)	TRANSISTOR		
Q13			2SC1740S(Q,R)	TRANSISTOR		
Q13			2SC945(A)(Q,P)	TRANSISTOR		
Q14			2SA733(A)(Q,P)	TRANSISTOR		
Q14			2SA933S(Q,R)	TRANSISTOR		
Q15			2SK163(L,M)	FET		
A1			W02-0975-05	ELECTRIC CIRCUIT MODULE		

E: Europe

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⚠ indicates safety critical components.

# L-1000T

## SPECIFICATIONS

<b>Antenna impedance</b>	75 Ω, Unbalanced
<b>FM frequency range</b>	87.5 MHz to 108 MHz
<b>Usable sensitivity (IHF) (DISTANCE)</b>	10.8 dBf (0.95 μV)
<b>50 dB quieting sensitivity (IHF) (DISTANCE)</b>	
<b>MONO</b>	16.2 dBf (1.8 μV)
<b>STEREO</b>	38.8 dBf (24 μV)
<b>Sensitivity (DIN)</b>	
<b>MONO: S/N 26 dB, 40 kHz Dev.</b>	0.7 μV
<b>STEREO: S/N 46 dB, 46 kHz Dev.</b>	25 μV
<b>Signal to noise ratio (IHF)</b>	
<b>MONO: (75 kHz Dev.)</b>	92 dB (65 dBf input) 92 dB (85 dBf input)
<b>MONO: (75 kHz Dev.)</b>	78 dB (65 dBf input) 86 dB (85 dBf input)
<b>Signal to noise ratio (DIN)</b>	
<b>MONO: (40 kHz Dev.)</b>	78 dB (Unweighted 85.2 dBf input)
<b>MONO: (46 kHz Dev.)</b>	68 dB (Unweighted 85.2 dBf input)
<b>Total harmonic distortion</b>	
<b>(Except Europe and U.K.) (WIDE)</b>	
<b>MONO (75 kHz Dev.)</b>	
<b>1 kHz</b>	0.004%
<b>50 Hz ~ 10 kHz</b>	0.009%
<b>STEREO (75 kHz Dev.)</b>	
<b>1 kHz</b>	0.008%
<b>50 Hz ~ 10 kHz</b>	0.04%
<b>Total harmonic distortion (DIN) (WIDE)</b>	
<b>MONO (40 kHz Dev., 1 kHz)</b>	0.005%
<b>STEREO (46 kHz Dev., 1 kHz)</b>	0.02%
<b>Capture ratio (Except Europe &amp; U.K.)</b>	
<b>WIDE</b>	1.0 dB
<b>NORMAL</b>	2.5 dB
<b>NARROW</b>	3.0 dB
<b>Capture ratio (Europe &amp; U.K.)</b>	
<b>WIDE</b>	1.5 dB
<b>NORMAL</b>	3.0 dB
<b>NARROW</b>	4.5 dB

### Note:

KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

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KENWOOD poursuit une politique de progrès constants en ce qui concerne le développement. Pour cette raison, les spécifications sont sujettes à modifications sans préavis.

KENWOOD strebt ständige Verbesserungen in der Entwicklung an. Daher bleiben Änderungen der technischen Daten jederzeit vorbehalten.

### Note:

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

<b>Alternate channel selectivity (IHF)</b>	
<b>WIDE</b>	73 dB (±400 kHz)
<b>NORMAL</b>	80 dB (±400 kHz)
<b>NARROW</b>	75 dB (±300 kHz)
<b>Alternate channel selectivity (DIN)</b>	
<b>WIDE</b>	45 dB (±300 kHz)
<b>NORMAL</b>	80 dB (±300 kHz)
<b>NARROW</b>	70 dB (±200 kHz)
<b>Stereo separation (IHF)</b>	
<b>WIDE, 1 kHz</b>	71 dB
<b>Stereo separation (DIN)</b>	
<b>WIDE, 1kHz (65.2 dBf input)</b>	68 dB
<b>WIDE, 6.3 kHz (65.2 dBf input)</b>	48 dB
<b>Frequency response</b>	20 Hz to 15 kHz ±0.5 dB
<b>Spurious rejection ratio (98 MHz)</b>	110 dB
<b>Image rejection ratio (98 MHz)</b>	85 dB
<b>IF rejection ratio (98 MHz)</b>	110dB
<b>AM suppression ratio</b>	80 dB
<b>Sub-carrier suppression ratio (IHF)</b>	72 dB
<b>Sub-carrier suppression ratio (DIN)</b>	
<b>19 kHz, 46 kHz Dev.</b>	65 dB
<b>38 kHz, 46 kHz Dev.</b>	80 dB
<b>Output level/impedance at 1 kHz, 100% Dev.</b>	
<b>FIXED</b>	800 mV/100 Ω
<b>VARIABLE</b>	0 ~ 1.6 V/100 Ω
<b>DET. OUT</b>	0.5 V/600 Ω
<b>SIGNAL LEVEL OUT</b>	5.0 V DC/10 kΩ (90 dBf, DISTANCE)

### General

<b>Power consumption</b>	35 W
<b>Dimensions</b>	W: 440 mm (17-5/16") H: 97 mm (3-13/16") D: 410 mm (16-1/8")
<b>Weight (Net)</b>	10.5 kg (23.1 lb)

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